ALASKA RETIREMENT MANAGEMENT BOARD

BOARD OF TRUSTEES
AGENDA

April 21-22, 2016

Dena'Ina Convention Center
K'enakatnu Room
600 W. 7th Avenue
Anchorage, AK
907 263-2850

Teleconference # 1-800-315-6338 Pass Code 12762#

Thursday, April 21, 2016

I.	9:00 am	Call to Order
II.		Roll Call
III.		Public Meeting Notice
IV.		Approval of Agenda
V.		Communications, Public/Member Participation, and Appearances (Three Minute Limit)
VI.		Approval of Minutes: February 18, 2016
VII.		Election of Vice-Chair
VIII.	9:15	Reports

1. Chair Report

2. Committee Reports
   A. Actuarial Committee, *Kris Erchinger, Chair*

3. DRB Report
   A. Legislative Update

4. Treasury Division Report
   Action: Resolution 2016-02 Procurement Delegation
   Pamela Leary, Treasury Division Director

5. CIO Report
   Gary Bader, Chief Investment Officer

6. Fund Financial Report
   Scott Jones, State Comptroller, Treasury Division
   Kevin Worley, CFO, Division of Retirement & Benefits

9:45-10:15	7.	Private Equity Tactical Plan Action: Resolution 2016-03 – Private Equity Plan *Zachary Hanna, State Investment Officer*	
10:20-10:50	8.	Pathway Capital Management *Jim Chambliss and Canyon Lew*	

10:50 – Break
10 Minutes

11:00-11:40	9.	Allianz Global Investors U.S. *Melody McDonald and Ray Edelman*	
11:45-12:00	10.	Approve Updated Board Regulations	

Lunch – 12:00 – 1:30 pm

1:30-	11.	Actuary Reports	
1:30-1:50		A.	2015 Actuarial Valuation Review DB and DCR Plans Public Employees' Retirement System (PERS) Teachers' Retirement System (TRS) *Leslie Thompson, Gabriel Roeder Smith*
1:55-2:40		B.	2015 Actuarial Valuation DB and DCR: PERS and TRS Plans *Larry Langer, David Kershner, & Todd Kanaster*
2:40-3:00		C.	Audit Findings Recap *Kris Erchinger, Chair, Actuarial Committee* Action: Board Approval of Resolved Findings

3:00 – Break
10 Minutes

3:10-3:40 12. Hancock Agricultural Investment Group
Oliver Williams and Debra Goundry

3:45-4:45 13. Timberland Investment Resources [Executive Session]
Tom Johnson, Chris Mathis, Mark Seaman and Mike Wick

Recess

Friday, April 22, 2016

9:00 Call to Order

9:00-9:30 14. Advent Capital Management
Craig Altshuler and Paul Latronica

9:35-10:35 15. Performance Measurement – 4th Quarter
Paul Erlendson and Steve Center, Callan Associates, Inc.

10:35 – Break
10 Minutes

10:45-11:15 16. Adopt Asset Allocation:
Resolution 2016-04:
DB PERS/TRS/JRS
PERS/TRS/JRS Retiree Health Trusts
Retiree Major Medical HRAP/ODD

Resolution 2016-05: DB NGNMRS
Gary Bader, Chief Investment Officer
Paul Erlendson, Callan Associates, Inc.

11:20-11:40 17. Investment Actions
A. Investment Advisory Council Position
B. Private Equity Guidelines – Update
Resolution 2016-06
C. Equity Guidelines – Update
Resolution 2016-07
D. Futures Swaps

IX. Unfinished Business
1. Disclosure Reports
2. Meeting Schedule
3. Legal Report

X.	New Business
XI.	Other Matters to Properly Come Before the Board
XII.	Public/Member Comments
XIII.	Investment Advisory Council Comments
XIV.	Trustee Comments
XV.	Future Agenda Items
XVI.	Adjournment

(Times are approximate. Every attempt will be made to stay on schedule; however, adjustments may be made.)

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
MEETING

Location
Centennial Hall
Egan Room
Juneau, Alaska

MINUTES OF
February 18, 2016

Thursday, February 18, 2016

CALL TO ORDER

CHAIR GAIL SCHUBERT called the meeting of the Alaska Retirement Management Board (ARMB) to order at 9:00 a.m.

ROLL CALL

Nine ARMB trustees were present at roll call to form a quorum.

Board Members Present
Gail Schubert, *Chair*
Sam Trivette, *Vice-Chair*
Gayle Harbo, *Secretary*
Kristin Erchinger
Commissioner Sheldon Fisher
Commissioner Randall Hoffbeck
Martin Pihl
Tom Brice
Sandi Ryan

Board Members Absent
None

Investment Advisory Council Members Present
Dr. Jerrold Mitchell
Robert Shaw

Investment Advisory Council Members Absent
Dr. William Jennings

Department of Revenue Staff Present
Gary M. Bader, Chief Investment Officer
Scott Jones, State Comptroller
Bob Mitchell, State Investment Officer
Zachary Hanna, State Investment Officer
Shane Carson, State Investment Officer
Joy Wilkerson, State Investment Officer
Emily Howard, State Investment Officer
Victor Djajalie, State Investment Officer
Casey Colton, State Investment Officer
Pamela Leary, Director, Treasury Division
Judy Hall, Board Liaison

Department of Administration Staff Present
Jim Puckett, Chief Operating Officer, Division of Retirement & Benefits
Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits
John Boucher, Senior Economist, OMB

Consultants, Invited Participants, and Others Present
Stuart Goering, Department of Law, Assistant Attorney General
Todd Rittenhouse, Mondrian Investment Partners Ltd.
Matt Day, Mondrian Investment Partners Ltd.
Douglas McNeely, BlackRock
Laura Champion, BlackRock
Corin Frost, BlackRock
Kathryn Donovan, BlackRock
Paul Erlendson, Callan Associates, Inc.
Steve Center, Callan Associates, Inc.
John Holmgren, Zebra Capital Management
Roger Ibbotson, Zebra Capital Management

PUBLIC MEETING NOTICE

JUDY HALL confirmed that public meeting notice requirements had been met.

APPROVAL OF AGENDA

<u>MRS. HARBO moved to approve the agenda.</u> <u>MS. RYAN seconded the motion.</u>

The agenda was approved.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS AND APPEARANCES

None.

APPROVAL OF MINUTES: December 3-4, 2015

MRS. HARBO moved to approve the minutes of the December 3 - 4, 2015 meeting of the ARM Board. MS. RYAN seconded the motion.

The minutes were approved.

REPORTS

1. CHAIR REPORT

None.

2. COMMITTEE REPORTS

A. Audit Committee

MR. PIHL reported that the Audit Committee had a well-attended meeting the day before the Board meeting, with a fairly light agenda. The Department of Administration gave an update on the employer audit program and its replacement, and a summary of the audit activity over the year.

The Audit Committee had a rather long discussion on how GASB 68 has played out, and received a compliance report from Mr. McKnight and Pam Leary from the Department of Revenue.

B. Actuarial Committee

MS. ERCHINGER reported that the Actuarial Committee met the day before the Board meeting, and representatives from Buck attended, including Larry Langer, a new member who will be leading the Buck team. MS. ERCHINGER commented that she thinks Larry will be a great asset to the ARM Board Actuarial Committee.

MS. ERCHINGER reported that the primary agenda item was an update on the timing for the 6/30/2015 valuation. The Actuarial Committee did not receive the valuation yesterday, as statute requires that the review actuary review the information before it comes to the full Board. MS. ERCHINGER said that she is looking into whether it is possible for the committee to get parts of the draft valuation report earlier instead of waiting for the final report to be fully reviewed by the review actuary, because if the committee doesn't get it until the very end, they don't have enough time to review it before it comes before the full Board. The goal is to vet the 6/30/2015 valuation report at the April meeting, which will give them time to make recommendations before that report comes to the full Board to approve employer contribution rates at the June meeting.

MS.ERCHINGER reported some numbers that Buck gave as a high-level overview of the first draft of this valuation. The results show that the overall funded ratio for PERS for the DB plan rose from 70 percent to 78 percent due to the injection of state funds in FY 2015. The TRS DB plan funded ratio rose from 61 percent to 83 percent. On the DCR plan, the funded ratio for PERS increased from the 2014 to 2015 valuation from 77 percent to 98.8 percent. For TRS DCR, the increase was from 83.5 percent to 105.3 percent. MS. ERCHINGER said that they were told that these funding ratio increases were a result not only of the state assistance payment in FY 2015, but also retiree medical claims being much less than anticipated.

MS. ERCHINGER explained that the funding ratios of pension and healthcare in those plans are very lopsided. The draft valuation report showed that in the DB plan, in 2015 PERS healthcare is 99 percent funded, and TRS healthcare is 100 percent funded. However, on the pension side, the funding ration for PERS is only 67 percent and for TRS is 77 percent. Therefore, Buck recommends that for the 2015 valuation, 100 percent of state assistance be allocated to pension and zero percent to healthcare. MS. ERCHINGER stated that the Actuarial Committee supports this recommendation.

<u>MS. ERCHINGER moved on behalf of the Actuarial Committee that the ARM Board shift the allocation of state assistance for one year in 2017 with 100 percent allocated to DB pension and zero percent allocated to DB healthcare.</u>

MR. PIHL stated that he erred yesterday in voting with the committee because they didn't have the full report, and he thinks this should be postponed until April or June. MR. PIHL said that the larger issue is regarding all the other allocations between pensions and healthcare, so he is not in favor of voting on this until the Department of Administration and Buck come back with a look at the larger allocation problem. He noted that the allocation that was done last fall of 83 percent to pensions and 17 percent to healthcare resulted in a huge increase in what the state and municipalities had to report as their employer share. Therefore, MR. PIHL said he would abstain from the vote.

COMMISSIONER FISHER commented that there may still be some question as to whether the allocation was appropriate, but he thinks it is not fairly characterized as an inappropriate allocation. He noted that the committee did take action and wrote a report in yesterday's meeting.

A roll call vote was taken on the motion by MS. ERCHINGER. All voted in favor except MR. PIHL. <u>The motion passed.</u>

MS. ERCHINGER stated that the Actuarial Committee had also addressed a procedural issue about what actions taken in the committee require ratification by the full Board. They decided to present the reports that they have operated on in their first two meetings to the full Board.

The Actuarial Committee has had three full meetings. At the first two, on August 14, September 23, the committee solely focused on the audit findings that had come before the Board as a result of GRS's review. The committee, GRS, and Buck together went through the audit findings one by one and decided on ways to resolve each finding. MS. ERCHINGER noted that there are just a few items remaining to resolve. She commented that because the committee gave direction to the actuary in some instances, those types of decisions are things that the full Board should be ratifying.

Therefore, MS. ERCHINGER asked the full Board to accept the report from the Actuarial Committee and their recommendations for further action as decided in the committee meetings with

Buck and the actuary, so that the requests for certain information will be represented in the upcoming valuation.

MS. ERCHINGER moved to ask the full Board to approve the report from the Actuarial Committee, as well as the recommendations included in the action column to the right on the schedules, which were included in meeting materials. MRS. HARBO seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

MRS. HARBO commented on how productive it was to have the two actuaries and the committee all sit down together on August 14.

MS. ERCHINGER added that the committee had agreed that they want to make sure that when direction is given to Buck or the review actuary to do work on behalf of the committee, they follow the same procedures as the Board follows, which is to request the information in writing and seek the Chair's approval on whether or not to forward it as a formal request. Therefore, the committee has two items that they will be forwarding for approval, one of which is a review of a schedule produced by MR. PIHL about the allocation issue.

C. DC Plan Committee

MR. TRIVETTE reported that the DC Plan Committee had an ambitious schedule the day before this meeting, with three major topics that they spent considerable time on.

The committee received an update from DRB on the survey that Empower (which used to be Great West) is conducting of people who took disbursements from their DC accounts. They are modifying the survey and trying to figure out how to get more people to take it. Empower is also doing new initiatives to educate members and will be doing training throughout the upcoming year, as well as making information available online so people in remote sites can access it.

MR. TRIVETTE reported that the committee had hoped to get some information on Health Reimbursement Accounts, as they had some concerns that the balances may not be very big, similar to what they learned of individual DCR account balances. The data was not available, but the committee was told that it will be available for the next Board meeting. MR. TRIVETTE stated that DRB is also making other changes currently, such as making deferred compensation available to all public employees, not just State of Alaska workers.

MS. HARBO asked whether it is known how many people in the HRA program are over 65 or close to 65, and whether those people are able to view their accounts. COMMISSIONER FISHER responded that the data is available, but he hasn't examined it; MR. TRIVETTE said that he doesn't think that individual participants are able to access the information themselves now, and that is an issue they have been pursuing.

The third issue that the DC Plan Committee discussed is the range of options available to participants in the DC plan. The committee discussed at the September meeting possibly having a firm examine whether the current system encompasses all of the best practices or if changes should be made. MR. BADER talked to Callan, which has a DCR plan group with expertise in this area, and they are interested in doing a review for Alaska. MR. TRIVETTE reported that the committee passed a motion supporting the state spending the money to get this review done. The Department of Revenue confirmed that money is available in the budget to do it, and the action will be on the agenda later in this meeting.

MR. TRIVETTE stated that the DC Plan Committee decided that they needed a regular schedule for committee meetings, and have decided to meet in February and in September each year.

D. Legislative Committee

CHAIR SCHUBERT said that the Legislative Committee did not meet, and this should not be on the agenda.

3. DIVISION OF RETIREMENT & BENEFITS REPORT

A. Membership Statistics/Buck Invoices/HRA Rates

MR. WORLEY reported the membership statistics for December 31, 2015. Compared to the prior year, PERS DB membership has declined by 1,700 and PERS DC has increased by 1,100. TRS DB has decreased by 460 and TRS DC has increased by 420. There was no material change in terminated membership. Retirees and beneficiaries have increased by about 1,250 in PERS and 350 in TRS, for a total increase of about 1,600. MR. WORLEY reported that in calendar year 2015, the Division processed over 2,200 retirement applications, handled almost 94,000 phone calls, and responded to almost 61,000 e-mails.

MR. WORLEY stated that the Buck Consultants billings are pretty standard, and quarterly reports have been provided. At the Board's request, a prior-year summary for the same quarter was included.

MR. WORLEY said that the new annual amount for HRAs for FY 17 has been computed to $2,049.36, which they show broken down into quarterly, monthly, biweekly, and so on for different pay period structures. He noted that a member who had worked since the inception of the program until now would have at least $16,000 in their account without interest. MR. WORLEY added that the Division is working on the balances within the account, and they will be in MyRnB access, so members will be able to access their balances through the portal.

B. Legislative Update

MR. BOUCHER reviewed the pending bills that are of interest to the ARM Board.

- HB 47 would modify the 2008 salary floor for a specific set of communities that have sustained a significant population drop between 2000 and 2010, and would modify the interest rate that is charged on late contributions for those entities.

- HB 66 would extend retiree health insurance to dependents of deceased public employees.

- HB 90 is the peace officer and firefighter retirement bill, which would cover certain employees with a combination Defined Benefit, Defined Contribution plan.

- HB 211 would structure a retirement incentive program for public employees in the Teachers' Retirement System. They did an initial analysis, but heard that the bill is going to be amended.

- SB 79 has a companion bill, HB 172, which would allow the reemployment of members who retire from the TRS DB plan.

- SB 88/HB 280 would provide for a new defined benefit tier for employees who were first hired after July 1, 2013. They would be defaulted into either a new defined benefit tier, TRS Tier IV or Tier V, but they would also be able to elect between the DC and the DB plans.

- HB 299 provides some clarifying language excluding certain contract instructors from the PERS and TRS system.

4. DEPARTMENT OF REVENUE UPDATE

COMMISSIONER HOFFBECK noted that one of the provisions of the Governor's total fiscal plan was to potentially use pension obligation bonds as a way to flatten the obligation to the pension system by changing it to a debt obligation. COMMISSIONER HOFFBECK said that in a hearing before House Finance, it was clear that there is a fear of debt, and they are probably going to shelve the idea for this year. However, they will continue to try to promote the benefits of this approach.

TREASURY DIVISION REPORT

DIRECTOR PAM LEARY reported that they presented the treasury and the ARM Board budget to the House subcommittee. It was substantially the same budget as they presented in the September meeting; they have answered questions, and not heard many objections, but the budget has not been finalized yet.

5. CHIEF INVESTMENT OFFICER REPORT

Chief Investment Officer GARY BADER reported a rebalancing between the PERS and TRS and the various funds associated with them. He reported on various transactions, and reviewed the watch list.

MR. BADER requested a motion to modify the watch list.

MRS. HARBO moved to have the Board remove Coventry, Everest, Lehman, and MacKay Shields from the watch list. MR. TRIVETTE seconded the motion. The motion passed by unanimous consent.

MR. BADER reviewed a report in the packet about net of fee returns. Callan worked with them on a presentation that he think fairly represents the Board's investment returns and a way to compare them with the fees that are incurred in earning those returns. They plan to have Callan present this report each year in September.

MR. BADER reviewed some staff changes at various investment firms, then responded to a question from a previous meeting. COMMISSIONER FISHER had asked what the correlations were between fixed income and Schroder's inflation-linked security strategy, and between equities and that strategy. MR. BADER stated that the correlation with the S & P 500 is .36, and with fixed income, .14, very low, which fits what they expected.

MR. BADER noted that there is an action item later on the agenda involving the approval of a fixed income policy statement for high yield. It did not include the usual red lines marking changes, but MR. BADER offered to show Board members a copy with the changes marked before the vote.

6. FUND FINANCIAL REPORT

State Comptroller SCOTT JONES reviewed the financial statements for the six months ending December 31, 2015. The ending invested assets were $28 billion, with a change in invested assets of negative 3.5 percent, 2.71 percent of which was related to income. This total comprises the PERS system with $15.8 billion, the TRS system with $7.8 billion, the JRS with $169 million, the military with $35.6 million, SBS with $3.3 billion, and Deferred Compensation with $792 million. MR. JONES stated that January wasn't a great month, as the assets among the various plans decreased by a total of about $1 billion to $27 billion. Of that, $914 million was a loss in the markets, and $102.8 million was the month's net withdrawal from the plan. The net inflow of cash for January was $2.5 million.

MR. WORLEY directed board members to the supplement at the end of his report. He pointed out the differences between benefits being paid out monthly and contributions coming in for each plan. VICE-CHAIR TRIVETTE commented that the advantage of these systems is that 65-70 percent of the money spent on benefits is paid by neither the employer nor the employee, but comes from the return on equity, which is the Board's responsibility to earn.

7. FUTURES

MR. BADER introduced this as the first of three interrelated presentations during this Board meeting, on futures, swaps, and alpha. He began by explaining the history of these trading vehicles, why they came to be and how they have evolved. MR. BADER said that futures contracts enable one to acquire a great amount of market exposure with only a small amount of money up front. MR. BADER gave several examples of how the futures exchange works and explained that leverage is high in these transactions. He noted that the ARM Board has been using futures since

2006 in a cash equitization program, and through 2015 had netted roughly $15 million. State Street Global Advisors has been coordinating the program, but it costs about $23,000 a year; MR. BADER said that staff could do it internally and save a lot of money, or they may be able to negotiate a better fee structure with State Street if activity is increased substantially. MR. BADER noted that an action memo later in the meeting would request to bring the cash equitization program in-house and request approval to go long and short on futures.

CHAIR SCHUBERT recessed the meeting from 10:31 a.m. to 10:47 a.m.

8. MONDRIAN INVESTMENT PARTNERS LTD.

TODD RITTENHOUSE and MATT DAY discussed the organization and philosophy of Mondrian Investment Partners, then reviewed the performance, portfolio positioning, and outlook for the strategy of their investments. MR. RITTENHOUSE explained that Mondrian is independent and employee-owned, and they manage $57 billion, primarily for institutional investors. The presentation included charts showing Mondrian's client types, asset classes, and products, including the international small cap portfolio that they manage for ARMB.

MR. DAY explained the philosophy and process that the global fixed income team uses as background information for the discussion of performance and positioning. Since its inception in 1997, the ARMB portfolio has had strong long-term results, outperforming by .6 percent in year 2015 despite a lot of volatility in fixed income securities. MR. DAY reviewed the positioning as shown in the written report and explained Mondrian's strategy of investing in foreign currencies and using their proprietary inflation forecasts for other countries. MR. ERLENDSON asked how accurate their forecasts have been historically, and MR. DAY replied that in back testing, they have found their forecasts not as good as perfect foresight but better than the consensus forecasts.

MR. DAY noted that this fund is split 70/30 between international fixed income and emerging markets, and the nominal yield has been 3.9 percent. Board members asked a few technical questions, and CHAIR SCHUBERT asked about the performance net of fees and expenses, which was printed too small in the appendix for her to read. MR. DAY replied that the current fees are 36 basis points, so the fund is handily outperforming the net of fees.

9. SWAPS

MR. BADER stated that swaps were approved some time ago, but since it has been so long, he wanted to review what a swap is and explain why they are asking for authority to engage in swaps anew. MR. BADER said that he would show how swaps could be used to facilitate a return enhancement strategy that is proposed later in the agenda called portable alpha.

MR. BADER defined a swap as an agreement between parties to exchange returns of different asset classes, and gave an example of how it might work. MR. BADER explained that there is infinite leverage in this type of deal, and people can agree to swap returns without putting up any money. Unlike in futures exchanges, there is no clearinghouse associated with swaps; the agreements are between the parties involved, and they have to reset periodically. A dealer can be involved, and there are several standard types of contracts in frequent usage for swap trades.

MR. TRIVETTE asked how the department is doing with staffing, and if this would take a lot of staff time; MR. BADER replied that for this transaction, staffing is not a concern, but as they attempt to engage in more equity transactions, additional staff would be important.

10. BLACKROCK – INDEX FUNDS

DOUGLAS MCNEELY, the managing director of BlackRock, runs their institutional focus group. LAURA CHAMPION, who works with larger investors, CORIN FROST, the global head of their index products strategy group, and KATHRYN DONOVAN, a product strategist, also joined the meeting. The team from BlackRock presented an overview of four strategies that they currently manage, with total assets of about $845 million for Alaska.

MS. DONOVAN discussed the global fixed income strategy, which is split almost evenly between active and passive. She reviewed team members and BlackRock's philosophy and process of investing. MS. DONOVAN also discussed the intermediate government bond fund and the government/credit fund.

MR. FROST reviewed the equity index portfolio, and discussed new strategies and trends in index equities. He explained that because it requires such scale, there are only a two or three major index managers globally, and BlackRock is the largest. A team of about 60 based in San Francisco manage the fund. MR. FROST reviewed the team structure, philosophy and process of BlackRock's equity index fund. He stated that the fund outperforms long-term by about 20 basis points per annum, which can be expected year in and year out because of conservative assumptions on dividend withholding taxes.

MR. MCNEELY thanked the ARM Board for their confidence in BlackRock and for having them at the meeting.

CHAIR SCHUBERT recessed the meeting from 11:58 a.m. to 1:30 p.m.

11. CAPITAL MARKETS ASSUMPTIONS

PAUL ERLENDSON and STEVE CENTER from Callan Associates presented information on why they do capital markets assumptions, how they are used, and some background on what informed their views in the 10-year forward-looking projections that cover the period 2016 through 2025.

MR. ERLENDSON explained that the purpose of capital markets assumptions is to come up with a rational basis for deploying assets. The main questions to be answered are what liabilities need to be funded, and what is the time horizon? Decisions about how to invest and how much risk to take depend on those issues. MR. ERLENDSON explained that when Callan does their assumptions, they are looking at a five-to-ten-year period, because market cycles take a while to play out the difference between value and growth, currency movements, and interest rate trends. A five-to-ten-year horizon generally captures full cycles, whether peak-to-peak or trough-to-trough.

MR. ERLENDSON explained some of the considerations that go into establishing their expectations. He said that they look at the different attributes of various asset classes, the expected volatility and expected return, and come up with a midpoint around which they try to capture how much uncertainty there is. Then they create a diversified portfolio. MR. ERLENDSON noted that trustees must question whether active management with its higher fees is warranted. A better outcome is expected, or at least a lower risk, than if capital were passively invested in the index fund. Callan will work with investment staff to determine where they can add value.

MR. ERLENDSON explained that they do this exercise annually, and there is rarely much change in their outlook from year to year because things get smoothed over a ten-year period. He discussed some of the economic issues that they take into consideration, and said that they view most asset classes as fairly valued. He mentioned the effect of lower oil prices, and the question of when interest rates will go up and how quickly.

MR. ERLENDSON reviewed some history to reiterate his point that time horizon matters, and emphasized that investors should carefully consider their choices in a strategic mix and then stick with it. MR. ERLENDSON pointed out that two asset classes that ARMB has significant exposure to, real estate and private equity, are the two highest-returning asset classes over the longer period, and lately other investors are getting into them, while ARMB has been benefiting all along.

MR. ERLENDSON discussed Callan's observations on gross domestic product growth, job market growth, slowing growth in China, and inflation. He noted that in the U.S., student debt now exceeds consumer debt, median household income is relatively flat, and many people are not saving for retirement.

MR. CENTER discussed the individual sectors – fixed income, domestic equity, international equity, and emerging markets – and how data from those markets informed Callan's capital market projections. Interest rates are low in developed markets all over the world, and Europe and Japan have entered into a period of the quantitative easing that the U.S is currently coming out of. MR. CENTER explained that if interest rates rise, assets can be reinvested at the higher rates, and he would not advise moving away from fixed income, because it is an important, low-risk part of Alaska's investment plan.

MR. CENTER reviewed the U.S. equity market, which is examined in several different ways. As to whether it is underpriced, overpriced, or fairly priced, based on price-to-earnings multiples, MR. CENTER said it may be slightly overvalued but generally looks well-valued. Earnings growth has slowed and will probably remain stagnant, but the profit growth for the U.S. market is expected to continue to improve. MR. CENTER said that dividend yields have grown rapidly since 2012, but growth is expected to return to a more moderate pace. In the non-U.S. equity market, there is a lot of uncertainty, with more volatility in P/E ratios than in the U.S., but some recovery in dividend growth; price valuations are near long-term averages in non-U.S. equities.

MR. CENTER reviewed emerging markets, commenting that valuations are very attractive right now, but growth in earnings and dividend yields have been depressed. Price-to-earnings ratios in emerging markets dipped during 2015, and there is a lot of room for growth.

MR. ERLENDSON reviewed the capital market expectations for the major asset classes, including the compounding rate they expect to take place over 10 years and the projected risk around that return. He pointed out that in many cases the return expectations have been decreased, but so has the risk; compared to the past couple of years when Callan has been increasing the volatility, now they think these asset classes are starting to stabilize, but at lower expected returns.

MR. ERLENDSON talked about the mathematical components of Callan's model, and acknowledged that it involves a lot of informed judgment. Callan is going to work with the staff and the IAC to modify some of the assumptions to account for ways that Alaska differs from the broad market. MR. ERLENDSON stated that they would report on the modifications they are making at the next meeting.

MR. PIHL asked whether an 8 percent return is unachievable; MR. ERLENDSON replied that there are ways of eking out incremental value, but the higher the return target, the lower the probability of achieving it. He estimated the probability of being able to raise a 7 percent expected return to 8 percent at about 40 percent. MR. ERLENDSON added that the time horizon on the liabilities of the DB pension fund, though halfway through, is still long, but acknowledged that a case could be made for de-risking and lowering return expectations as the horizon shortens.

12. PORTABLE ALPHA

MR. BADER defined portable alpha as a risk-adjusted excess return of the market. If an investment has the same market risk as the index referred to, but achieves a higher return, that is called excess alpha. In order to transfer or port that alpha to a different asset class, futures or swaps can be used. MR. BADER said that portable alpha is an investment strategy targeting a specific market exposure with a source of alpha that is independent of the market. A portable alpha program requires either futures or swaps, and a consistent and reliable source of alpha generation.

MR. BADER reviewed a Callan presentation to show that 73 percent of small cap managers outperform the index, as does the ARM Board's small cap pool, so that is a good place to look for alpha. MR. BADER showed a hypothetical transaction to explain how futures work, and acknowledged that there are indications that swaps can be entered into with less expense. He emphasized that the point was that a portable alpha strategy could provide an additional source of excess performance, noting that Callan's presentation had just shown that nearly every asset class had a return of less than 8 percent.

MR. SHAW asked how long it would take this strategy to prove itself; MR. BADER replied that it would probably show affirmatively in three years. MR. BADER stated that this strategy would work if ARMB's investment managers continue to perform as they have in the past, if they can hold the cost line, and if the future of the swap in the Russell 2000 is not priced at too great a discount to allow them to benefit from the small cap managers.

CHAIR SCHUBERT recessed the meeting from 2:53 p.m. to 3:08 p.m.

13. GLOBAL EQUITY – BETA NEUTRAL

JOHN HOLMGREN and ROGER IBBOTSON of Zebra Capital Management talked about a strategy they are proposing to the Board called Global Equity – Beta Neutral, which is based on some principles that MR. IBBOTSON presented at the Board's Education Conference.

MR. IBBOTSON explained that the objective of an equity beta neutral long/short fund is to be beta neutral, or not sensitive to the market. This means that in up markets the full benefit is not realized, but in down markets losses are minimized. The objective is a 7 to 8 percent rate of return with a relatively low risk of 5 to 6 percent deviation per annum. The strategy would concentrate on mid and small cap stocks. The philosophy is generally the same as they use in the microcap fund, which is to buy companies with strong fundamentals which are not popular. MR. IBBOTSON gave examples to explain how the strategy works, and said that there are potentially very big returns with low risk. He showed a six-year track record of a fund that has been in existence since June 2010, and has had a positive return every year.

MR. IBBOTSON noted that they do have a higher volatility version of this with higher returns, and the intention for Alaska would be to mix the two funds together to control the volatility but get higher returns. The higher volatility fund had a shorter track record, but showed a net performance of 14.95 percent since inception.

MR. HOLMGREN reviewed the investment process, explaining how the research analytics try to determine the fundamental goodness of a company, and then combine that with measures of popularity which are driven by trading activity. He reviewed the global portfolio in four regions, showing last year's gross returns, annualized gross returns, the standard deviation, and the return to risk. MR. HOLMGREN noted that the regions are not correlated with each other, thus providing a diversification effect. For risk management, Zebra uses a combination of proprietary systems as well as a third party, which MR. HOLMGREN described as very robust risk oversight. He emphasized that the fund was positive on profitability, value, and dividend yield, and tended to be very non-correlated not only with equity markets, which is to be expected, but also with other hedge funds, and with equity market neutral. MR. HOLMGREN said that this strategy makes money by buying what others don't want to get bargains, and shorting what others get too excited about in order to generate great returns.

14. INVESTMENT ACTIONS/INFORMATION

1. Resolution 2016-01 High Yield Guidelines

CIO GARY BADER recommended some amendments to the investment guidelines. The biggest change is that the draft guidelines change the process for identifying the rating of a security to match the benchmark, which MR. BADER said seems reasonable. The second change is the amount of holdings rated less than B3 could be loosened from 25 percent to the greater of 25 percent of the benchmark plus 5 percent, which would not violate the investment guidelines. Therefore, staff recommended that the Board adopt Resolution 2016-01, which adopts these guidelines.

MR. TRIVETTE moved to adopt Resolution 2016-01. MRS. HARBO seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

2. Futures

MR. BADER asked the ARM Board to authorize staff to make transactions in futures contracts, which the Board has been using, but there is potential for considerable savings in investment management fees by having staff handle these transactions.

MRS. HARBO moved to authorize staff to transact in futures contracts. MS. RYAN seconded the motion.

COMMISSIONER HOFFBECK suggested that some constraints might be in order, and MR. BADER responded that they could tighten the parameters at the next meeting, when he would come back to the Board with more circumscribed restrictions on staff.

MR. BRICE moved to table the motion until the next meeting. MRS. HARBO seconded the motion.

MR. BADER suggested an amendment to the motion instead of tabling it, so MR. BRICE withdrew his motion to postpone.

MRS. HARBO moved to amend the motion to restrict staff to no more than $500 million notional value Russell 1000 futures, and $500 million notional value Russell 2000 futures. MR. TRIVETTE seconded the amendment.

A roll call vote was taken, and the amended motion passed unanimously.

3. Swaps

MR. BADER asked the ARM Board to authorize staff to engage in swaps transactions on the Russell 1000 and the Russell 2000, no more than $500 million in each swap.

COMMISSIONER HOFFBECK moved to authorize staff to engage in swaps transactions with the $500 million limit. MRS. HARBO seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

4. Portable Alpha

MR. BADER asked the ARM Board to authorize staff to engage in portable alpha strategies constrained by the same limitations put by the Board on swaps and futures.

MR. TRIVETTE moved to authorize staff to engage in portable alpha strategies as defined. COMMISSIONER HOFFBECK seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

5. Cash Equitization

MR. BADER asked the ARM Board to authorize staff to transition the management of the cash equitization program from State Street Global Advisors to internal staff, unless they were able to negotiate a satisfactory fee agreement with State Street.

MRS. HARBO moved to authorize staff to manage the cash equitization program internally, subject to negotiations with State Street Global Advisors. MR. TRIVETTE seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

6. Sentinel Realty Capital Expenditure

MR. BADER explained that an apartment building in Folsom, California that is one of the ARMB's investments needs some modifications. He asked the Board to authorize an expenditure of up to $525,000 by Sentinel Realty Advisors to have the work done. MR. BADER stated that the contractor that built the building has gone bankrupt and cannot do the repairs or be pursued.

MR. TRIVETTE moved to authorize Sentinel Realty Advisors to spend $525,000 on the necessary modifications. MRS. HARBO seconded the motion.

MR. PIHL questioned whether the realty advisor company bore any responsibility; MR. BADER replied that the investment managers do very thorough evaluations, and this was not something that would be caught in a normal evaluation of the building. The flaw only came to light after another building of similar design by the same contractor had a stairway collapse with a fatality. MR. BADER noted that Sentinel has been forthright with the Board, previously accepting responsibility for a problem that developed in a building that they had purchased on behalf of the ARMB, but this was an unforeseeable situation and he believes they did proper due diligence.

MS. ERCHINGER noted that a key point in the written report was that the stairway collapse in the other building was due to water infiltration, which is not a problem in the property that the ARMB owns. It is not a simple case of substandard construction, but it is prudent to take every precaution.

A roll call vote was taken, and the motion passed unanimously.

7. **Beta Neutral-Advantage Mandate**

MR. BADER recommended that the ARMB invest in the Zebra Global Equity Beta Neutral and Advantage funds.

MR. TRIVETTE moved to direct staff to invest $200 million in the Zebra Global Equity Beta Neutral and Advantage funds, subject to satisfactory negotiation of terms. MRS. HARBO seconded the motion.

MR. TRIVETTE asked whether MR. BADER expected to put $100,000 in each fund; MR. BADER stated that they intend to confer with MR. HANNA to determine the proper mix between the two strategies.

COMMISSIONER FISHER asked what percentage of Zebra's assets under management this would represent; MR. BADER replied that he doesn't know the numbers, but Zebra has one other large multinational corporation invested which he believes is about to invest more.

A roll call vote was taken, and the motion passed unanimously.

8. **Defined Contribution Plan Proposal**

MR. BADER reminded the Board that the Defined Contribution Committee had recommended that the Board engage the services of Callan Associates to do a review of the defined contribution plans.

MR. TRIVETTE moved to engage Callan for services as proposed in the memo from Callan Associates dated October 16, 2015, subject to successful fee negotiations. MR. BRICE seconded the motion.

A roll call vote was taken, and the motion passed unanimously.

UNFINISHED BUSINESS

1. **Disclosure Reports**

MS. HALL stated that the disclosure reports were included in the meeting packet, and there was nothing unusual to disclose.

2. **Meeting Schedule**

MS. HALL noted two changes to the 2016 meeting calendar. The first is that a Defined Contribution Committee meeting will be added to the September meeting. Also, in June, the 23rd will be the committee meeting day and the 24th will be the Board meeting day.

3. **Legal Report**

MR. GOERING reported that they are engaged in discovery in the Petrobras matter, and all of the disclosures and production have been completed. They still expect a settlement along the way, but if not, the trial is scheduled for September. MR. TRIVETTE asked if there had been any surprises; MR. GOERING replied no, but it appears that only he and Chris Poag, the general counsel for the Permanent Fund, will be deposed in the case, avoiding having any investment staff in the hot seat.

MR. GOERING stated that they are still looking into the Volkswagen matter, but that would take place in German courts, not the U.S. Also, they are still in the process of updating the MOU with the Department of Law to come up with domestic and foreign litigation policy for the Board.

NEW BUSINESS

None.

OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD

None.

PUBLIC/MEMBER COMMENTS

None.

INVESTMENT ADVISORY COUNCIL COMMENTS

None.

TRUSTEE COMMENTS

MR. PIHL noted that everyone has the memo and summaries that he prepared; he remarked that he felt that with everything currently going on and the state position on state assistance funding, it was informative to show a longer-term picture of how the funds have worked in the system. MR. PIHL said the importance of this state assistance over time must be obvious to everyone, and he thinks that over the next few years there will be little or no state assistance, and it will lead to some painful years down the road.

MS. ERCHINGER thanked MR. TRIVETTE and MR. PIHL for their service on this Board, and commented that the Board will miss their counsel, their historical perspective, and their willingness to dive into details. MRS. HARBO added that they will be missed, she wishes them well, and she hopes that they might still attend some meetings.

MR. TRIVETTE commented that it has been an incredible 11 years, and the staff of the Department of Revenue, Department of Administration, and IAC have been top-notch and have provided tremendous value. He said it has been rewarding to spend time with people of such caliber, and it has been an honor to work with everyone. MR. TRIVETTE added that he had not planned to leave at this time, but it seems prudent.

CHAIR SCHUBERT remarked that both MR. TRIVETTE and MR. PIHL have been tremendously helpful in delving deeply into issues that interested or concerned them and bringing their perspectives to the Board. She also commented that she hopes they might call in for meetings in the future.

MR. BADER commented that he appreciates the collegiality of this Board, and he thanked MR. TRIVETTE and MR. PIHL on behalf of the staff for being easy to work with and appreciative of the contributions of staff.

FUTURE AGENDA ITEMS

None.

ADJOURNMENT

There being no objection and no further business to come before the board, the meeting was adjourned at 4:12 p.m. on February 18, 2016, on a motion made by MR. TRIVETTE and seconded by MR. PIHL.

Chair of the Board of Trustees
Alaska Retirement Management Board

ATTEST:

Corporate Secretary

Note: An outside contractor recorded the meeting and prepared the summary minutes. For in-depth discussion and more presentation details, please refer to the recording of the meeting and presentation materials on file at the ARMB office.

Confidential Office Services
Karen Pearce Brown
Juneau, Alaska

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Resolution 2016-02 Procurement Delegation	ACTION:	X
DATE:	April 21, 2016	INFORMATION:	

BACKGROUND:

At its June 25, 2010 meeting, the Alaska Retirement Management Board (Board) adopted Resolution 2010-15, Procurement-Related Delegation pursuant to 15 AAC 112.230 which authorizes the Board, in its discretion, to delegate in writing its authority under the procurement regulations to a public official.

STATUS:

The position of Treasury Division Director did not exist at the time of approval of Resolution 2010-15, and the proposed Resolution 2016-02 updates the delegation naming the Treasury Division Director rather than the State Comptroller.

RECOMMENDATION;

That the Board approve Resolution 2016-02 delegating to the Department of Revenue Deputy Commissioner, Treasury Division Director, Chief Investment Officer, and Board Liaison Officer certain powers noted in the *Delegation of Procurement-Related Authority* attached thereto.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Delegation of Procurement-Related Authority
Resolution 2016-02

WHEREAS AS 37.10.210 established the Alaska Retirement Management Board (Board) to provide prudent and productive management and investment of trusts or other State funds; and

WHEREAS AS 37.10.260(a) establishes that the Department of Revenue shall provide staff for the Board; and

WHEREAS AS 37.10.240(a) authorizes the Board to adopt regulations relating to procurement, which have been set out at 15 AAC 112.110-375; and

WHEREAS 15 AAC 112.230 authorizes the Board, in its discretion, to delegate its authority under the procurement regulations to a public official;

NOW THEREFORE BE IT RESOLVED THE ALASKA RETIREMENT MANAGEMENT BOARD will delegate to Department of Revenue staff certain powers noted in the *Delegation of Procurement-Related Authority* attached to this resolution and made a part hereof.

This resolution repeals and replaces Resolution 2010-15.

DATED at Anchorage, Alaska this ____ day of April, 2016.

____
Chair

ATTEST:

____
Secretary

Delegation of Procurement-Related Authority

Pursuant to Resolution 2016-02, the Department of Revenue Deputy Commissioner, Treasury Division Director, Chief Investment Officer, and ARMB Liaison Officer are hereby authorized to procure supplies, services, and professional services as deemed necessary, desirable or customary in conducting the day-to-day operations of the Board, including the authority to design, develop, draft and issue requests for proposal (RFPs) consistent with the law and to make decisions respecting protests and appeals relating to issuance of RFPs and notices of intent to proceed. The decisions by a designee hereunder on procurement protests and appeals shall be subject to appeal to the office of administrative hearings and, unless the commissioner of administration reserves the authority to consider a decision by that office, the decision by a hearing officer of that office shall be deemed to be the final administrative agency decision by the Board for all purposes, including appeal to the superior court.

The above-referenced individuals are further authorized to delegate the above responsibilities to additional Department of Revenue staff as necessary. The Board shall be notified at the next meeting as to which individuals have received such delegation.

ALASKA RETIREMENT MANAGEMENT BOARD
FINANCIAL REPORT

As of February 29, 2016

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
For the Eight Months Ending February 29, 2016

	Beginning Invested Assets	Investment Income (1)	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (2)
Public Employees' Retirement System (PERS)						
Defined Benefit Plans:						
Retirement Trust	$ 8,586,489,509	$ (528,734,534)	$ (141,519,291)	$ 7,916,235,684	-7.81%	-6.21%
Retirement Health Care Trust	7,012,198,154	(433,152,444)	(133,787,391)	6,445,258,319	-8.09%	-6.24%
Total Defined Benefit Plans	15,598,687,663	(961,886,978)	(275,306,682)	14,361,494,003	-7.93%	-6.22%
Defined Contribution Plans:						
Participant Directed Retirement	582,368,666	(47,535,242)	57,197,970	592,031,394	1.66%	-7.78%
Health Reimbursement Arrangement	191,992,905	(12,557,300)	21,387,072	200,822,677	4.60%	-6.20%
Retiree Medical Plan	43,611,892	(3,010,237)	10,450,983	51,052,638	17.06%	-6.16%
Defined Benefit Occupational Death and Disability:						
Public Employees	12,857,318	(831,672)	1,105,628	13,131,274	2.13%	-6.20%
Police and Firefighters	6,187,308	(404,066)	656,539	6,439,781	4.08%	-6.20%
Total Defined Contribution Plans	837,018,089	(64,338,517)	90,798,192	863,477,764	3.16%	-7.29%
Total PERS	**16,435,705,752**	**(1,026,225,495)**	**(184,508,490)**	**15,224,971,767**	-7.37%	-6.28%
Teachers' Retirement System (TRS)						
Defined Benefit Plans:						
Retirement Trust	5,242,445,334	(320,600,009)	(137,926,960)	4,783,918,365	-8.75%	-6.20%
Retirement Health Care Trust	2,606,131,168	(160,950,600)	(31,928,730)	2,413,251,838	-7.40%	-6.21%
Total Defined Benefit Plans	7,848,576,502	(481,550,609)	(169,855,690)	7,197,170,203	-8.30%	-6.20%
Defined Contribution Plans:						
Participant Directed Retirement	250,086,268	(19,950,802)	16,274,172	246,409,638	-1.47%	-7.73%
Health Reimbursement Arrangement	59,380,498	(3,825,026)	4,884,082	60,439,554	1.78%	-6.19%
Retiree Medical Plan	17,463,072	(1,172,557)	3,233,849	19,524,364	11.80%	-6.15%
Defined Benefit Occupational Death and Disability	3,164,542	(196,505)	(17,696)	2,950,341	-6.77%	-6.23%
Total Defined Contribution Plans	330,094,380	(25,144,890)	24,374,407	329,323,897	-0.23%	-7.35%
Total TRS	**8,178,670,882**	**(506,695,499)**	**(145,481,283)**	**7,526,494,100**	-7.97%	-6.25%
Judicial Retirement System (JRS)						
Defined Benefit Plan Retirement Trust	143,835,542	(8,910,906)	2,866,202	137,790,838	-4.20%	-6.13%
Defined Benefit Retirement Health Care Trust	27,224,906	(1,694,100)	(158,448)	25,372,358	-6.80%	-6.24%
Total JRS	**171,060,448**	**(10,605,006)**	**2,707,754**	**163,163,196**	-4.62%	-6.15%
National Guard/Naval Militia Retirement System (MRS)						
Defined Benefit Plan Retirement Trust	36,944,780	(1,699,484)	(566,796)	34,678,500	-6.13%	-4.64%
Other Participant Directed Plans						
Supplemental Annuity Plan	3,394,333,691	(133,560,997)	(26,909,376)	3,233,863,318	-4.73%	-3.95%
Deferred Compensation Plan	806,278,563	(38,028,230)	(1,557,695)	766,692,638	-4.91%	-4.72%
Total All Funds	**29,022,994,116**	**(1,716,814,711)**	**(356,315,886)**	**26,949,863,519**		
Total Non-Participant Directed	23,989,926,928	(1,477,739,440)	(401,320,957)	22,110,866,531	-7.83%	-6.21%
Total Participant Directed	5,033,067,188	(239,075,271)	45,005,071	4,838,996,988	-3.86%	-4.73%
Total All Funds	**$ 29,022,994,116**	**$ (1,716,814,711)**	**$ (356,315,886)**	**$ 26,949,863,519**	**-7.14%**	**-5.95%**

Notes:

(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
For the Month Ended February 29, 2016

	Beginning Invested Assets	Investment Income[1]	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income[2]
Public Employees' Retirement System (PERS)						
Defined Benefit Plans:						
Retirement Trust	$ 7,904,915,198	$ (4,584,901)	$ 15,905,387	$ 7,916,235,684	0.14%	-0.06%
Retirement Health Care Trust	6,471,723,497	(3,882,481)	(22,582,697)	6,445,258,319	-0.41%	-0.06%
Total Defined Benefit Plans	14,376,638,695	(8,467,382)	(6,677,310)	14,361,494,003	-0.11%	-0.06%
Defined Contribution Plans:						
Participant Directed Retirement	583,783,426	(2,041,805)	10,289,773	592,031,394	1.41%	-0.35%
Health Reimbursement Arrangement	197,401,293	(81,367)	3,502,751	200,822,677	1.73%	-0.04%
Retiree Medical Plan	49,396,474	(13,486)	1,669,650	51,052,638	3.35%	-0.03%
Defined Benefit Occupational Death and Disability:						
Public Employees	12,952,237	(5,697)	184,734	13,131,274	1.38%	-0.04%
Police and Firefighters	6,335,114	(2,465)	107,132	6,439,781	1.65%	-0.04%
Total Defined Contribution Plans	849,868,544	(2,144,820)	15,754,040	863,477,764	1.60%	-0.25%
Total PERS	**15,226,507,239**	**(10,612,202)**	**9,076,730**	**15,224,971,767**	-0.01%	-0.07%
Teachers' Retirement System (TRS)						
Defined Benefit Plans:						
Retirement Trust	4,789,471,781	(2,876,999)	(2,676,417)	4,783,918,365	-0.12%	-0.06%
Retirement Health Care Trust	2,424,393,378	(1,458,878)	(9,682,662)	2,413,251,838	-0.46%	-0.06%
Total Defined Benefit Plans	7,213,865,159	(4,335,877)	(12,359,079)	7,197,170,203	-0.23%	-0.06%
Defined Contribution Plans:						
Participant Directed Retirement	244,104,660	(846,629)	3,151,607	246,409,638	0.94%	-0.34%
Health Reimbursement Arrangement	59,639,409	(24,385)	824,530	60,439,554	1.34%	-0.04%
Retiree Medical Plan	18,999,215	(4,673)	529,822	19,524,364	2.76%	-0.02%
Defined Benefit Occupational Death and Disability	2,952,008	(1,657)	(10)	2,950,341	-0.06%	-0.06%
Total Defined Contribution Plans	325,695,292	(877,344)	4,505,949	329,323,897	1.11%	-0.27%
Total TRS	**7,539,560,451**	**(5,213,221)**	**(7,853,130)**	**7,526,494,100**	-0.17%	-0.07%
Judicial Retirement System (JRS)						
Defined Benefit Plan Retirement Trust	137,448,653	(79,696)	421,881	137,790,838	0.25%	-0.06%
Defined Benefit Retirement Health Care Trust	25,391,659	(14,677)	(4,624)	25,372,358	-0.08%	-0.06%
Total JRS	**162,840,312**	**(94,373)**	**417,257**	**163,163,196**	0.20%	-0.06%
National Guard/Naval Militia Retirement System (MRS)						
Defined Benefit Plan Retirement Trust	34,678,996	72,380	(72,876)	34,678,500	0.00%	0.21%
Other Participant Directed Plans						
Supplemental Annuity Plan	3,238,496,227	(3,001,081)	(1,631,828)	3,233,863,318	-0.14%	-0.09%
Deferred Compensation Plan	764,434,776	(540,059)	2,797,921	766,692,638	0.30%	-0.07%
Total All Funds	**26,966,518,001**	**(19,388,556)**	**2,734,074**	**26,949,863,519**		
Total Non-Participant Directed	22,135,698,912	(12,958,982)	(11,873,399)	22,110,866,531	-0.11%	-0.06%
Total Participant Directed	4,830,819,089	(6,429,574)	14,607,473	4,838,996,988	0.17%	-0.13%
Total All Funds	**$ 26,966,518,001**	**$ (19,388,556)**	**$ 2,734,074**	**$ 26,949,863,519**	**-0.06%**	**-0.07%**

Notes:

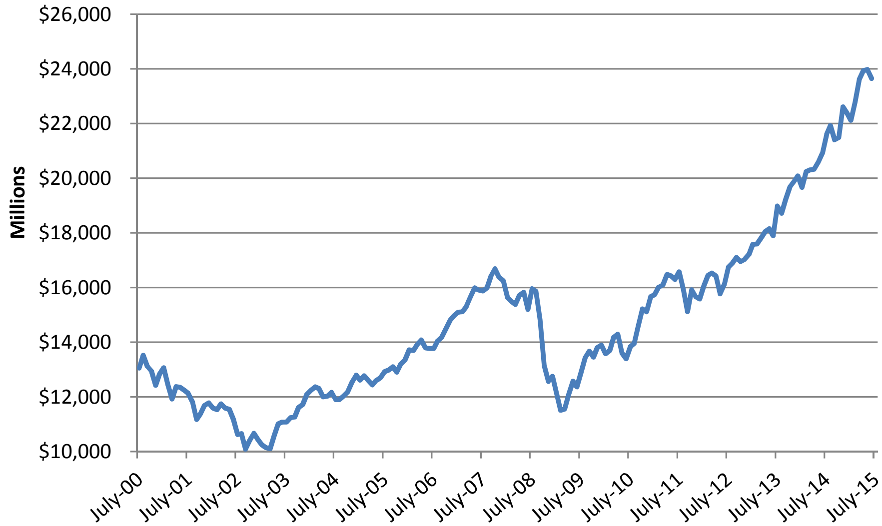
(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx

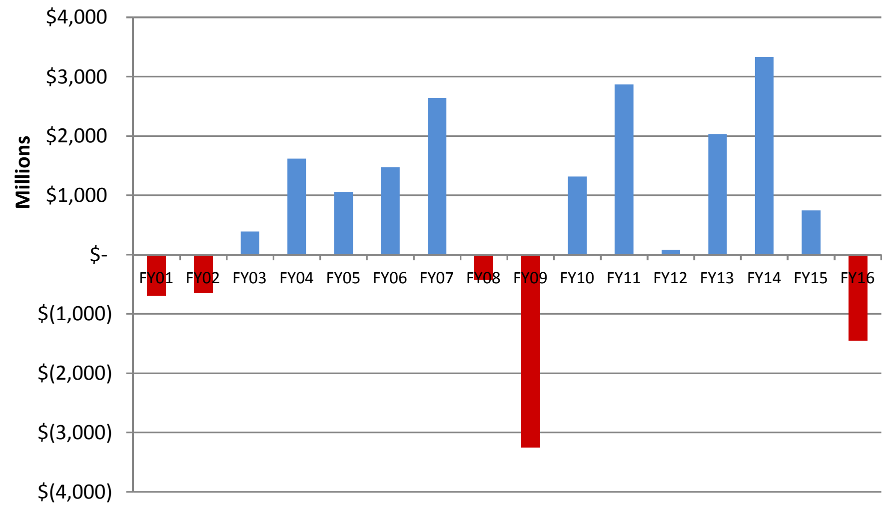
Total Defined Benefit Assets

As of February 29, 2016

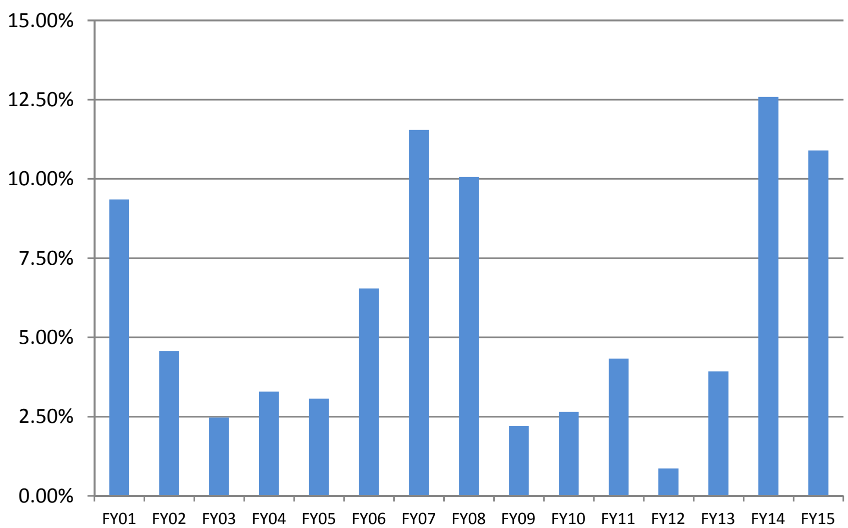
Totals Assets History



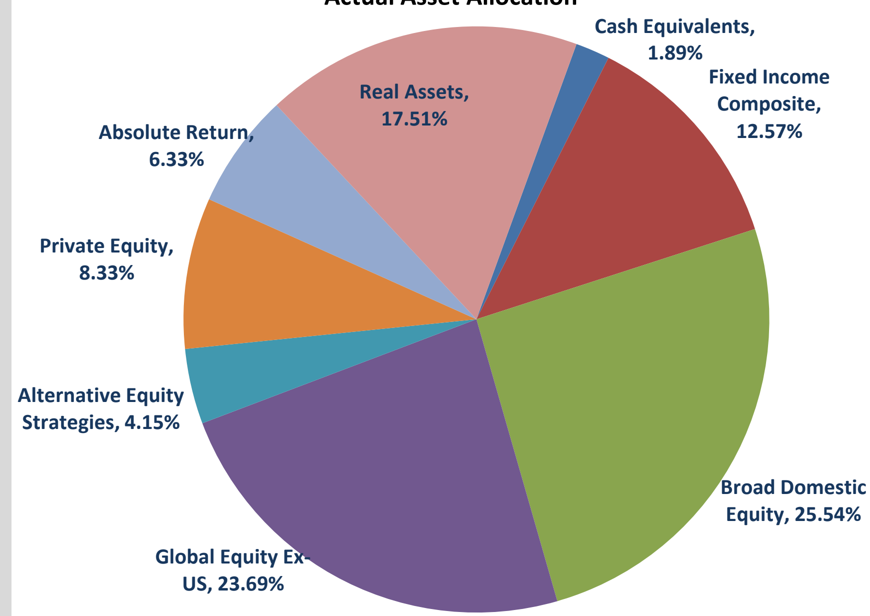
Income by Fiscal Year



5-year Annualized Returns as of Fiscal Year End

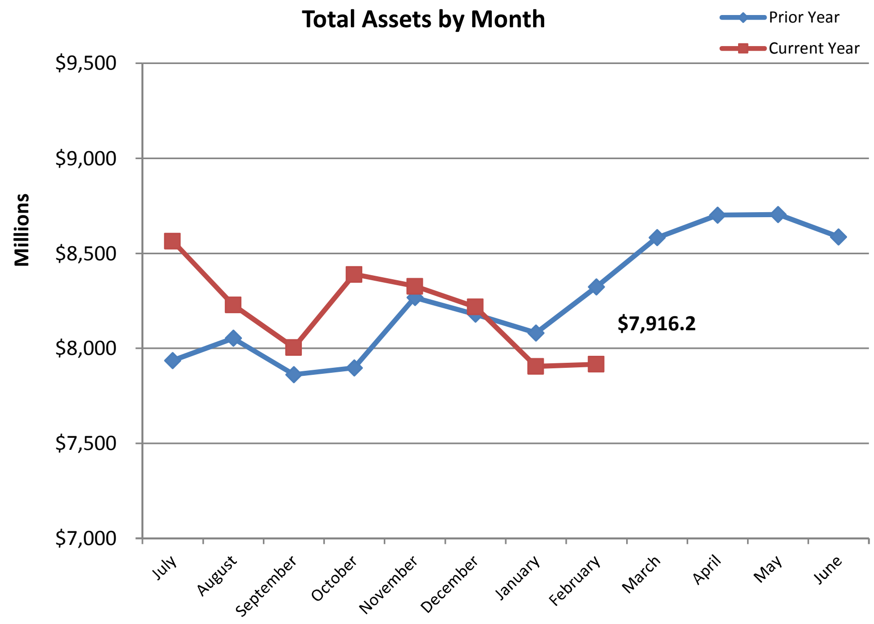


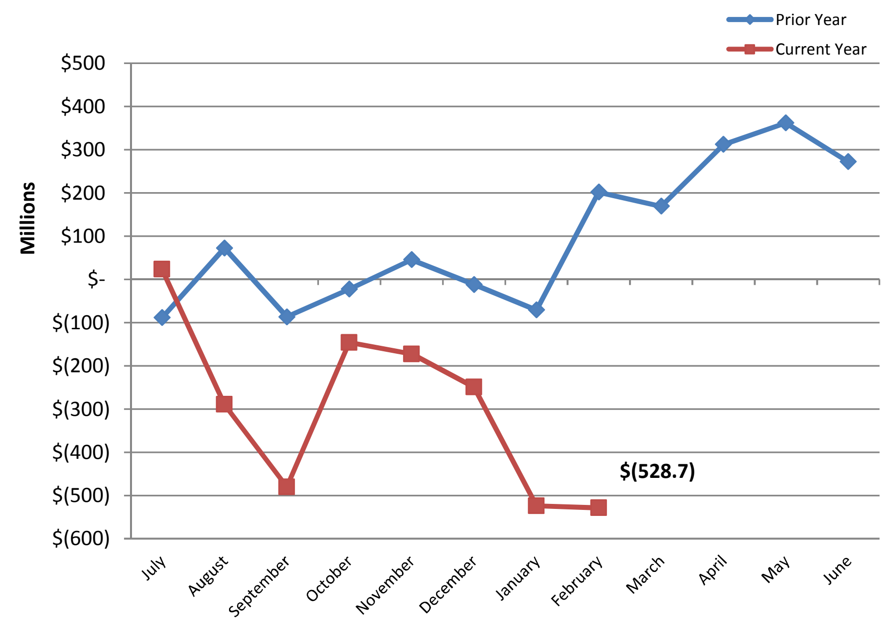
Actual Asset Allocation

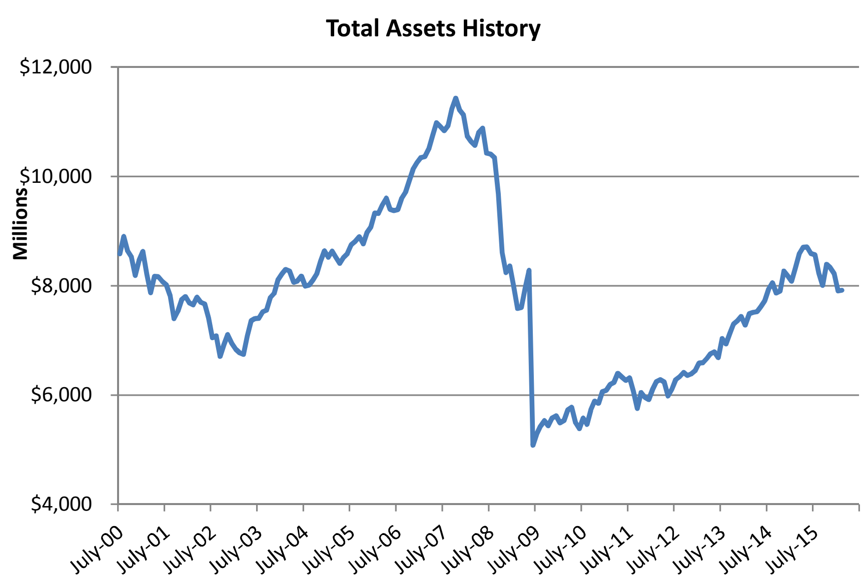


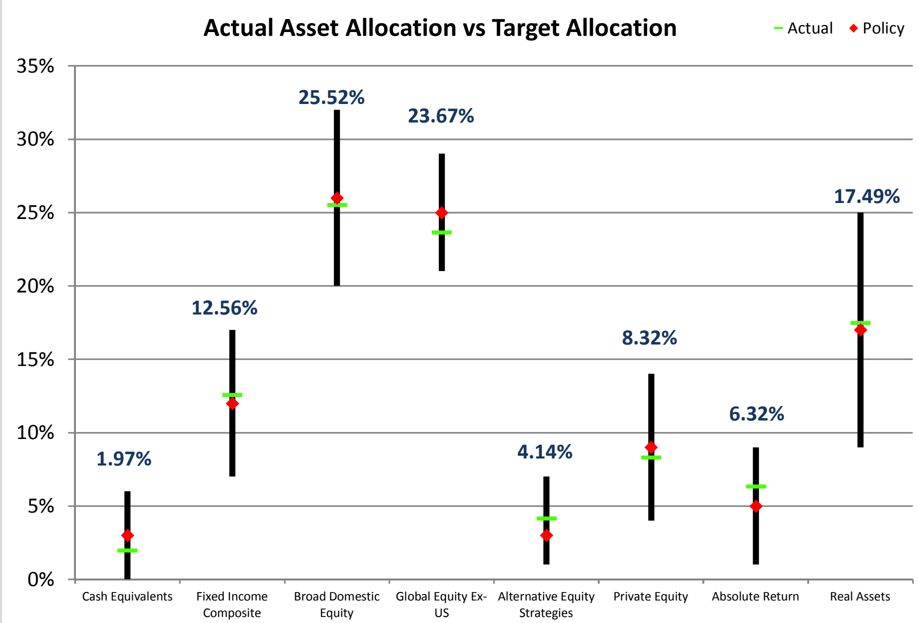
Public Employees' Retirement Pension Trust Fund

For the Eight Months Ending February 29, 2016



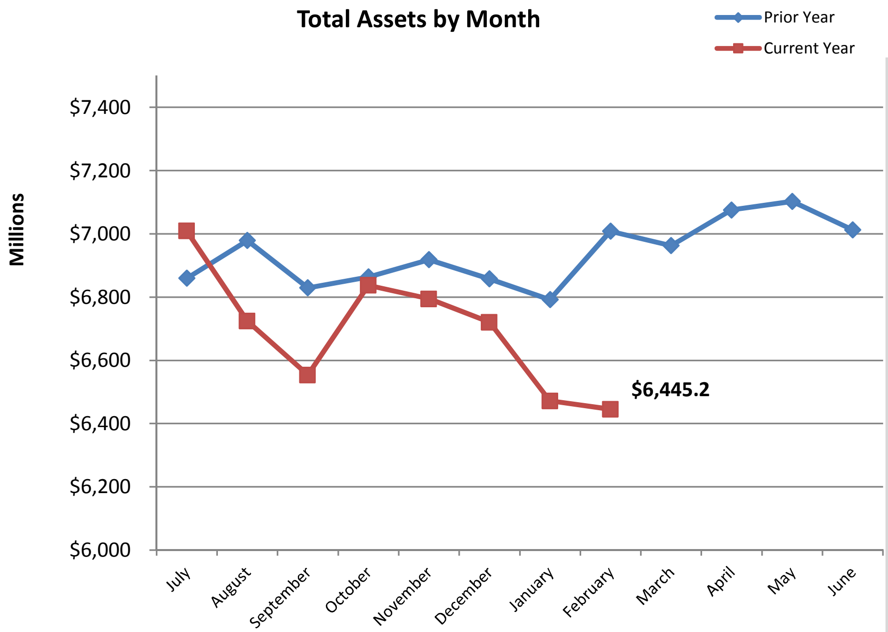


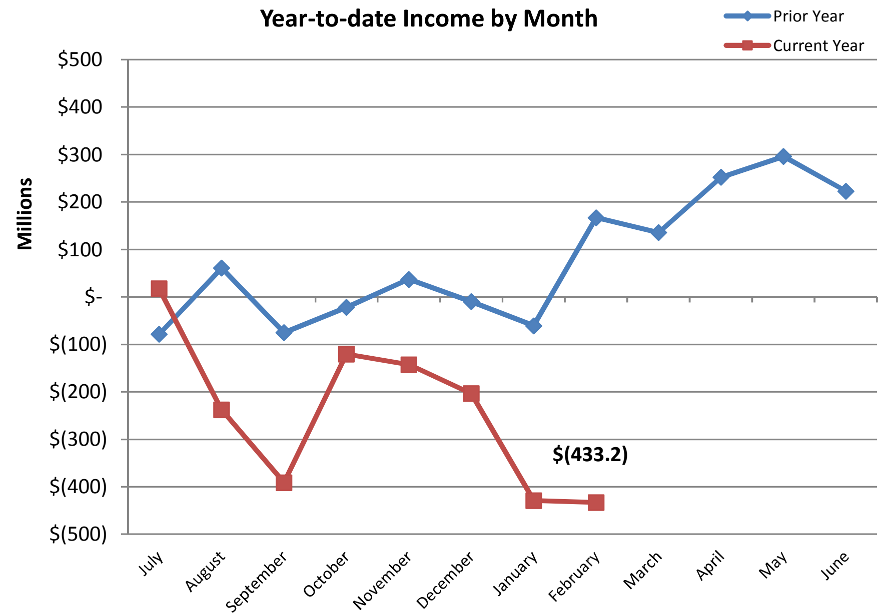


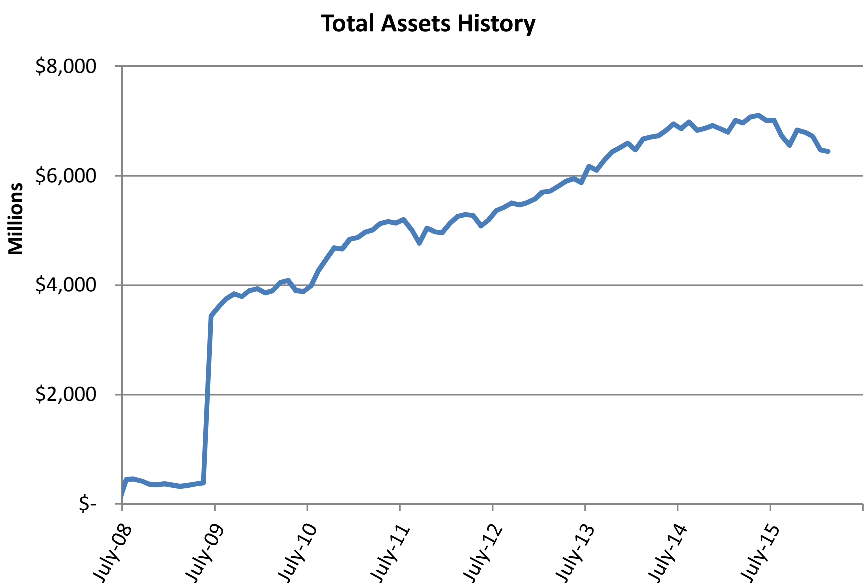


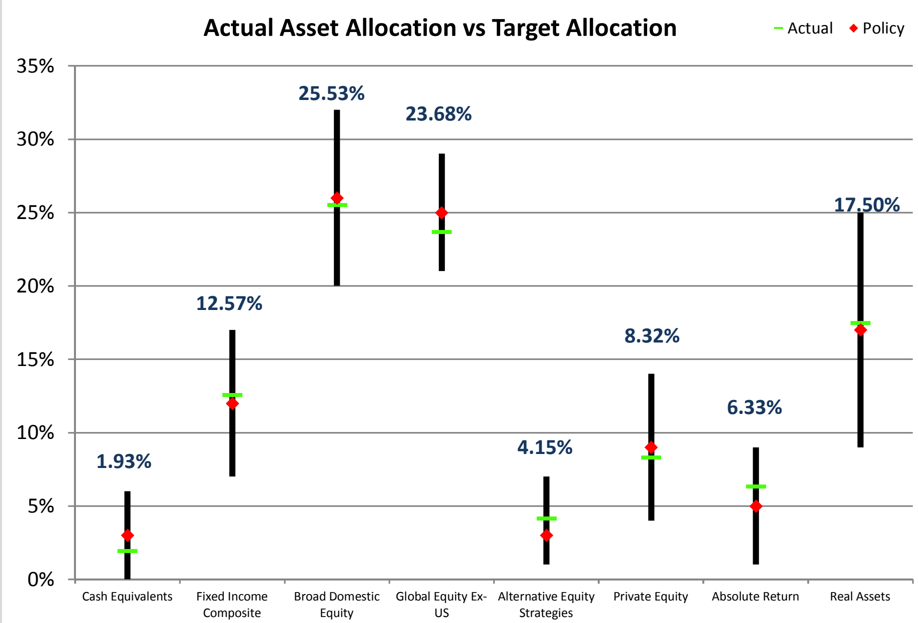
Public Employees' Retirement Health Care Trust Fund

For the Eight Months Ending February 29, 2016



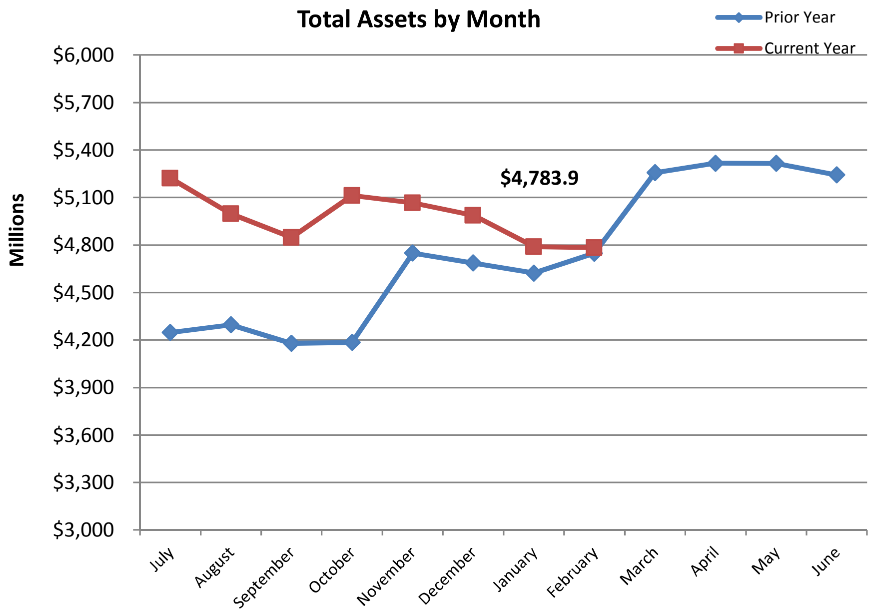


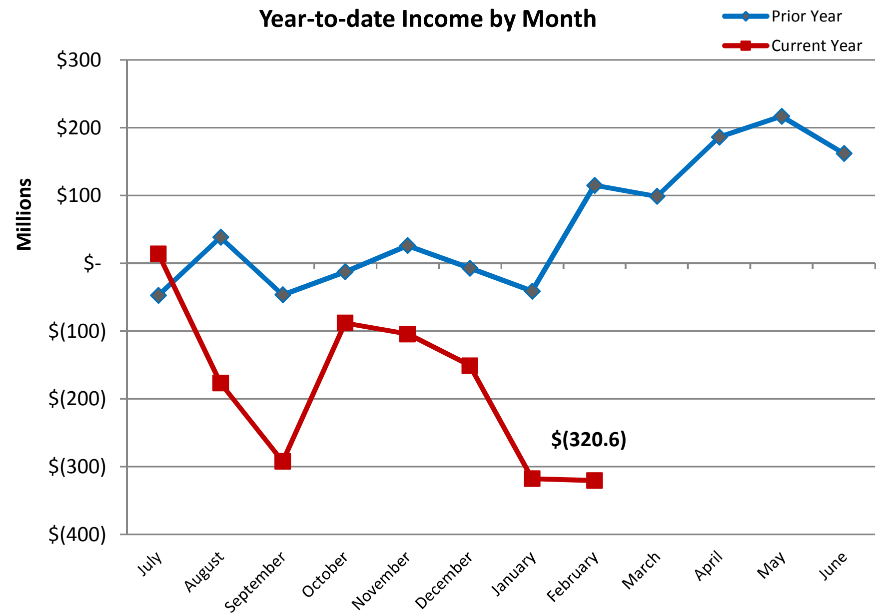


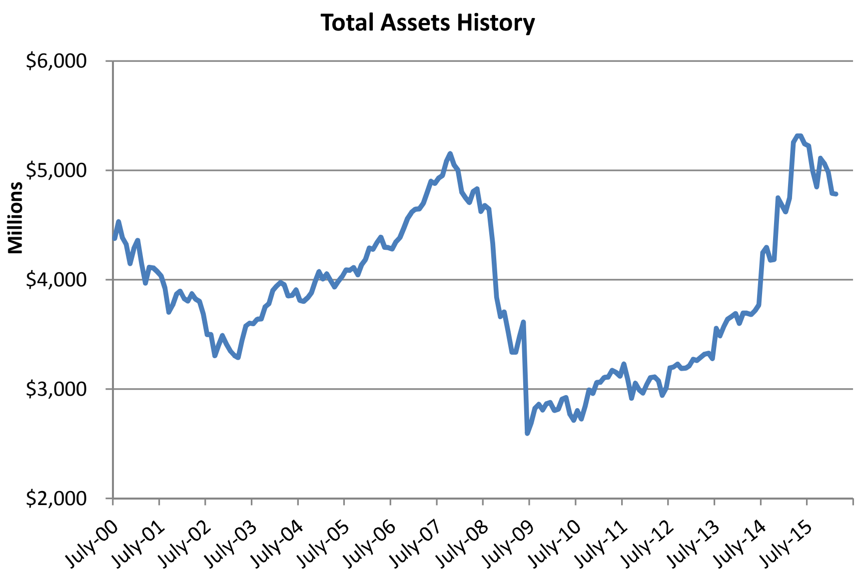


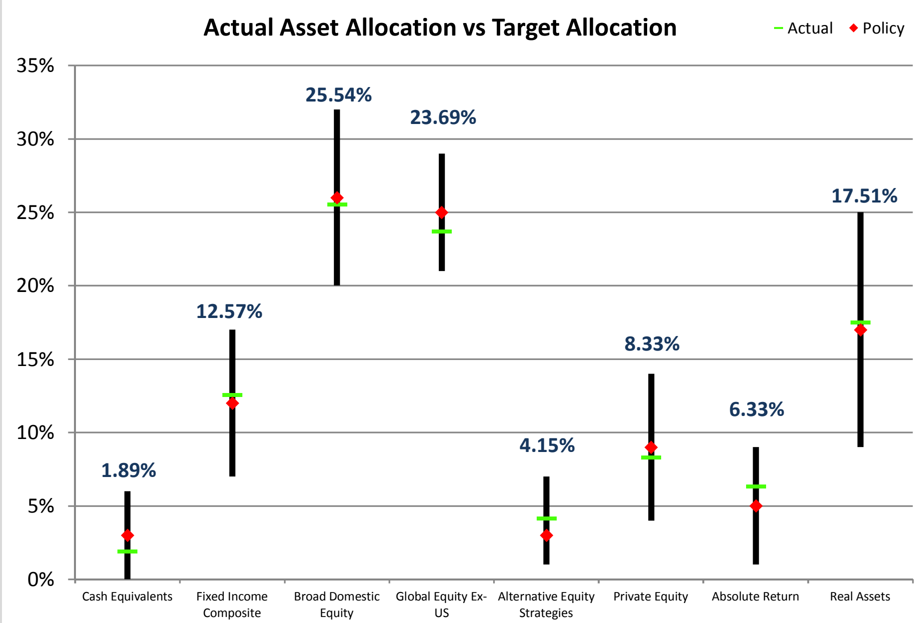
Teachers' Retirement Pension Trust Fund

For the Eight Months Ending February 29, 2016



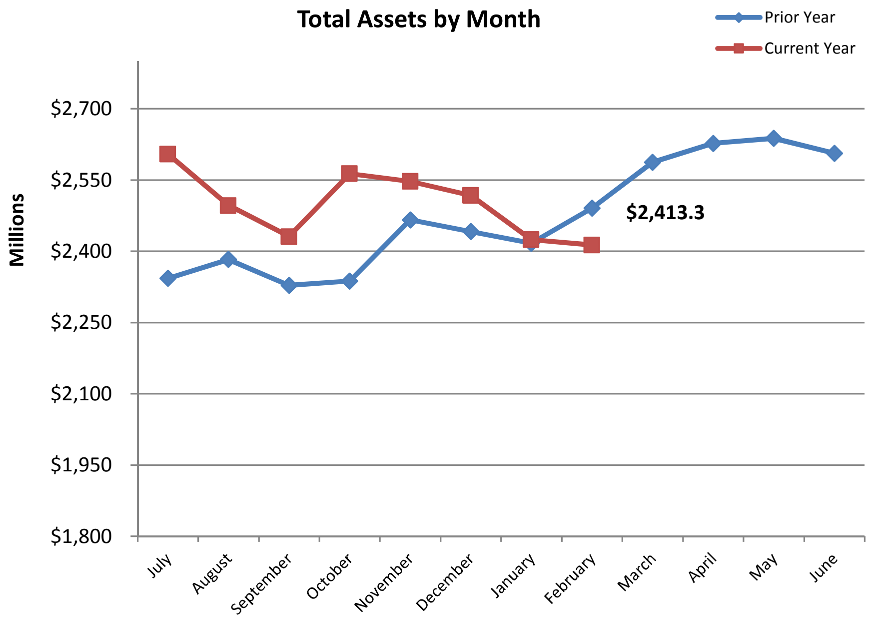


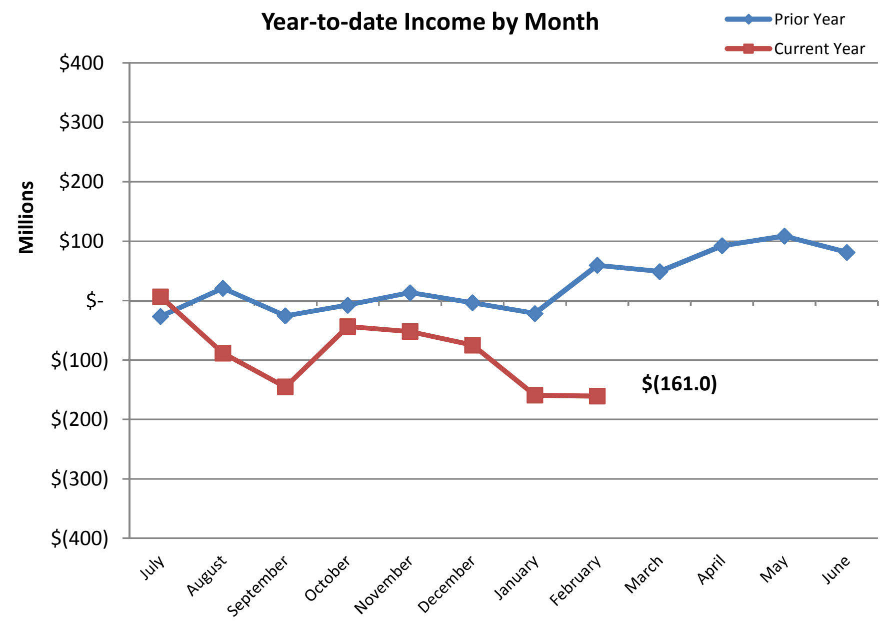


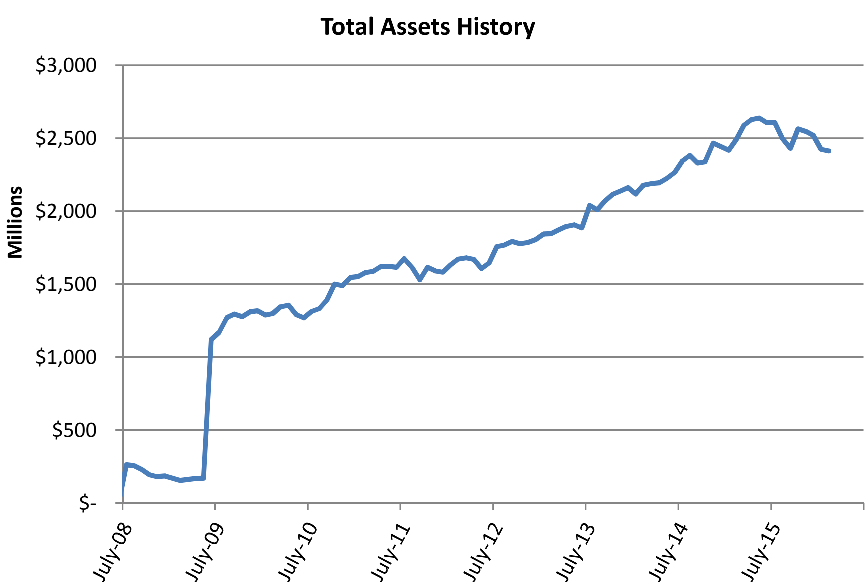


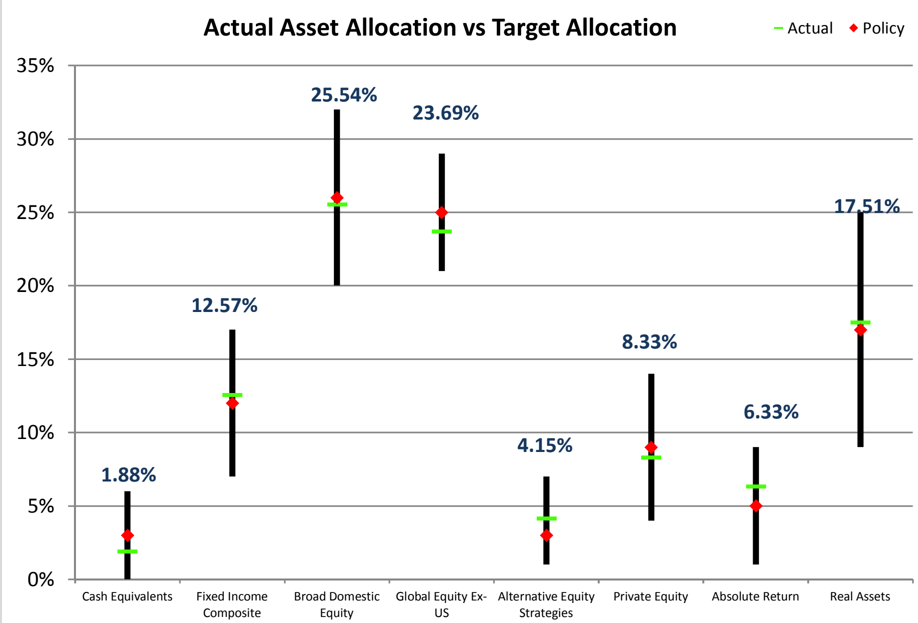
Teachers' Retirement Health Care Trust Fund

For the Eight Months Ending February 29, 2016



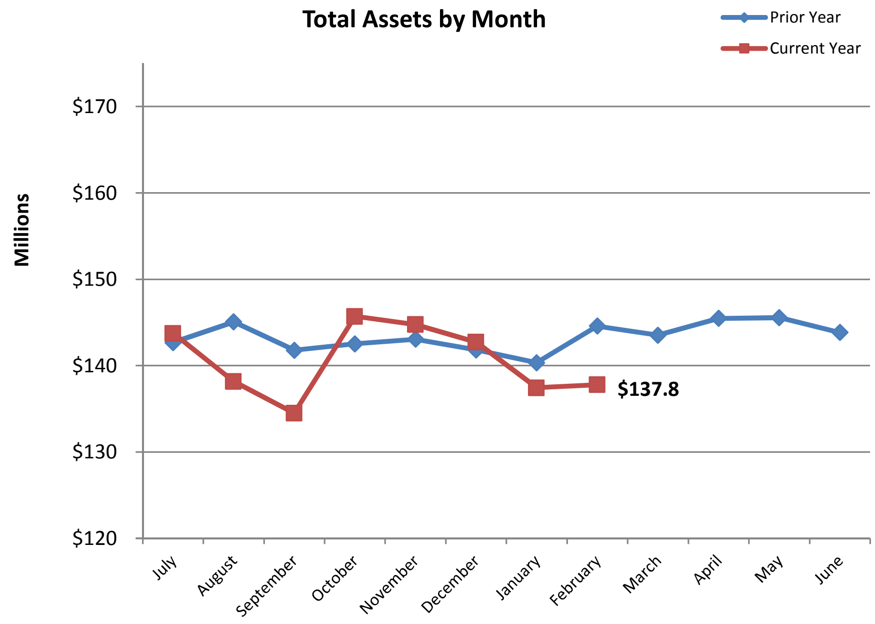


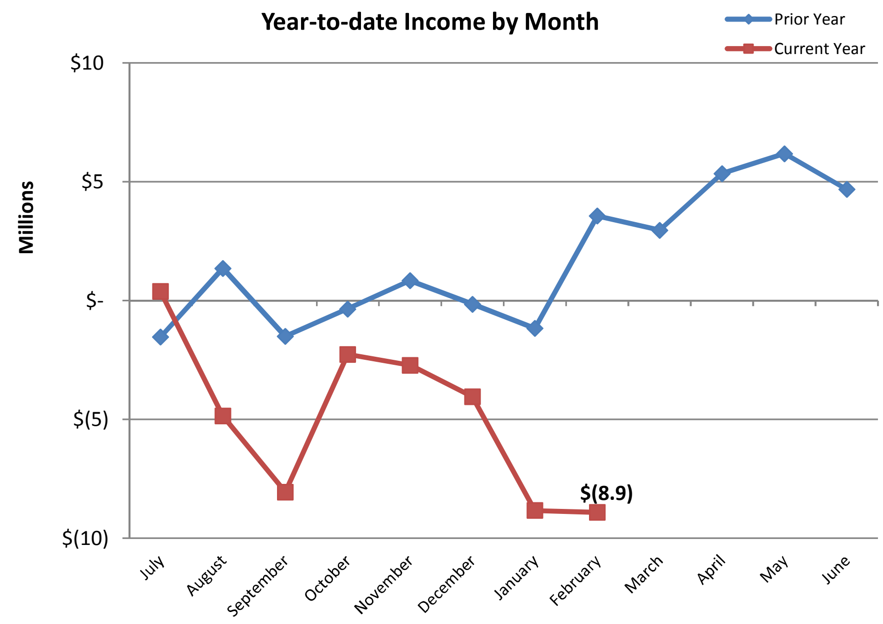


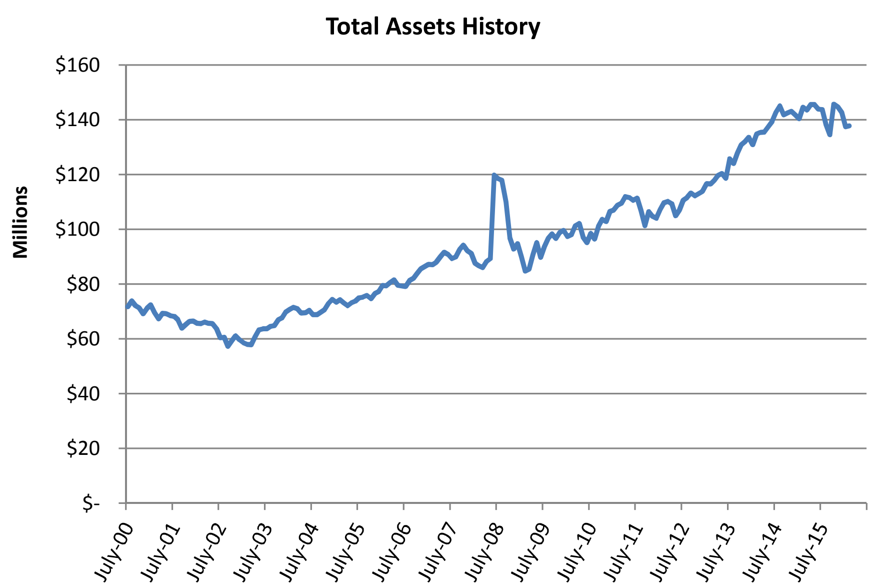


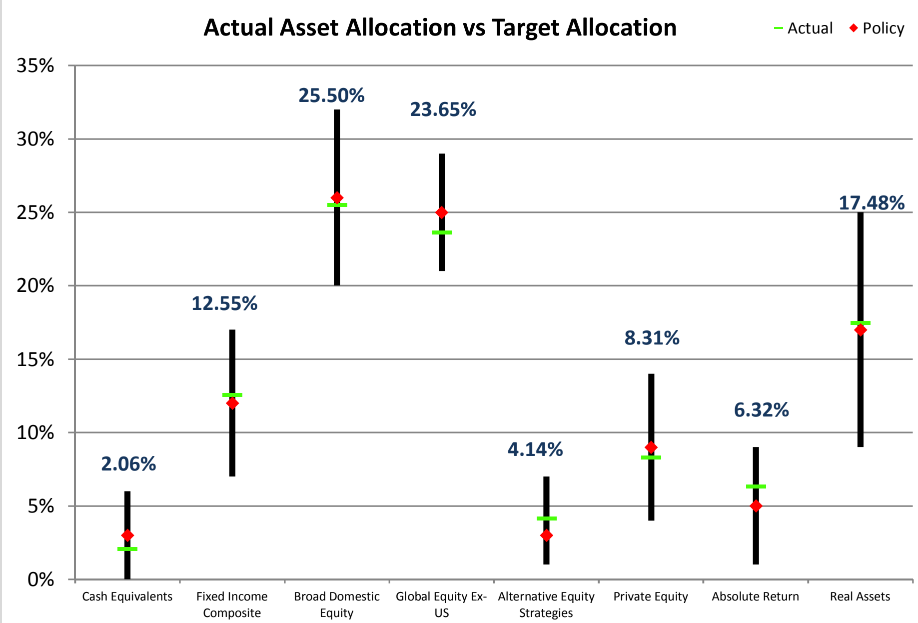
Judicial Retirement Pension Trust Fund

For the Eight Months Ending February 29, 2016



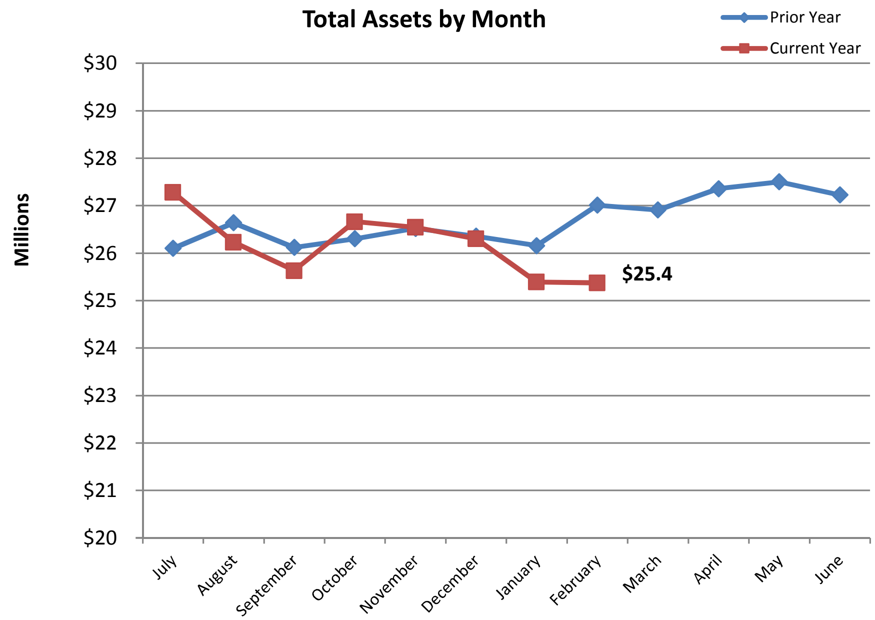


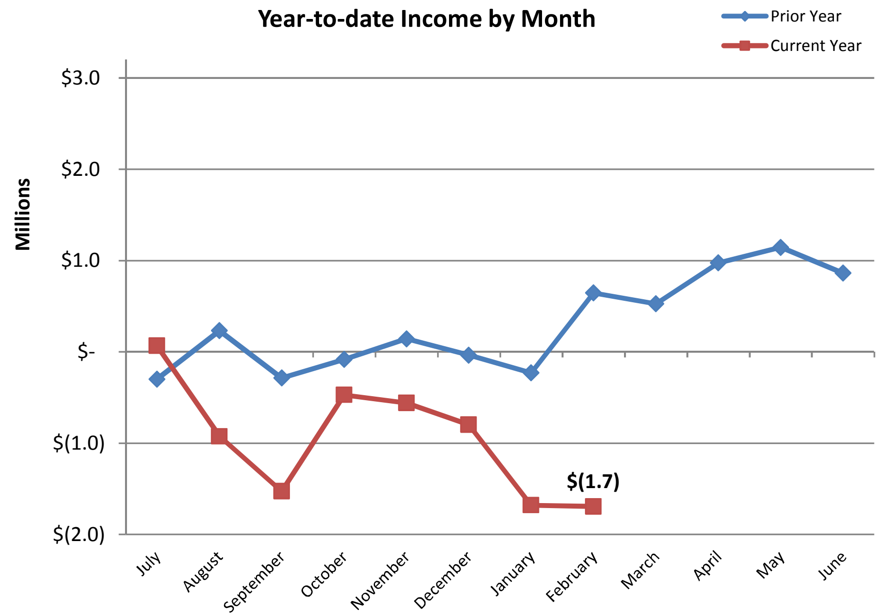


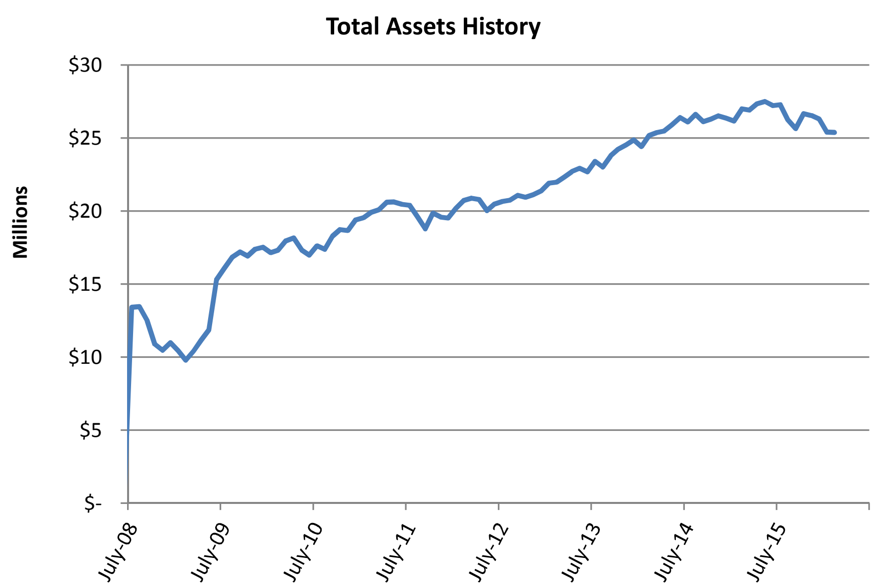


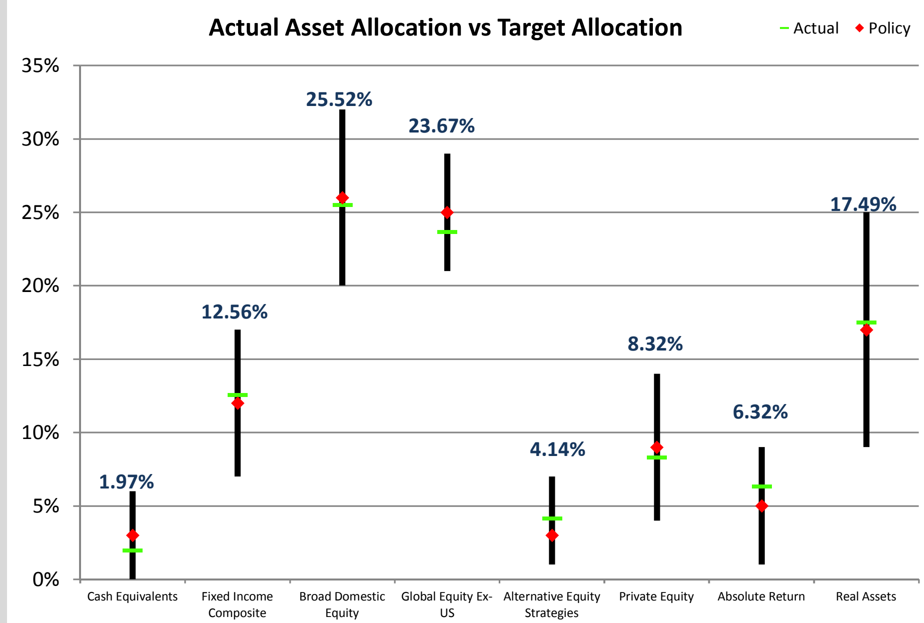
Judicial Retirement Health Care Trust Fund

For the Eight Months Ending February 29, 2016



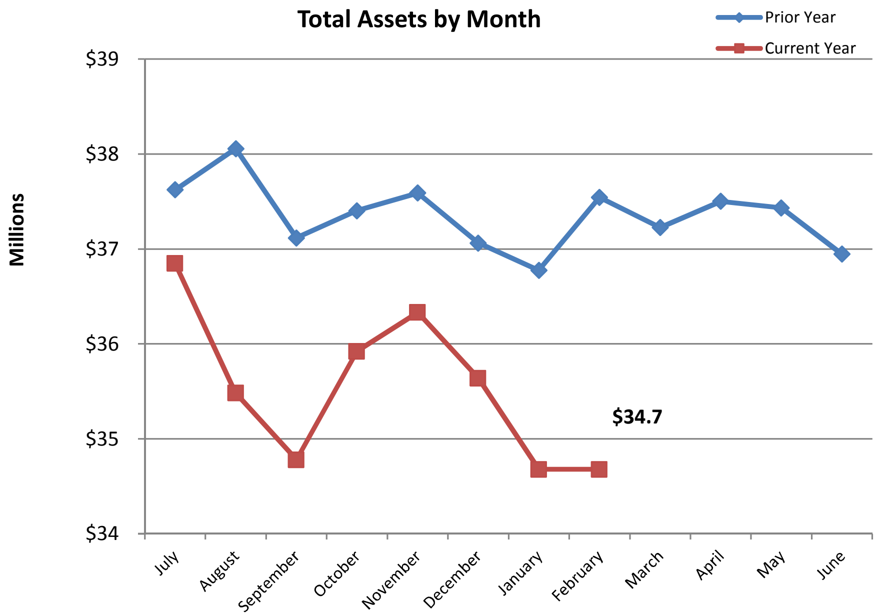


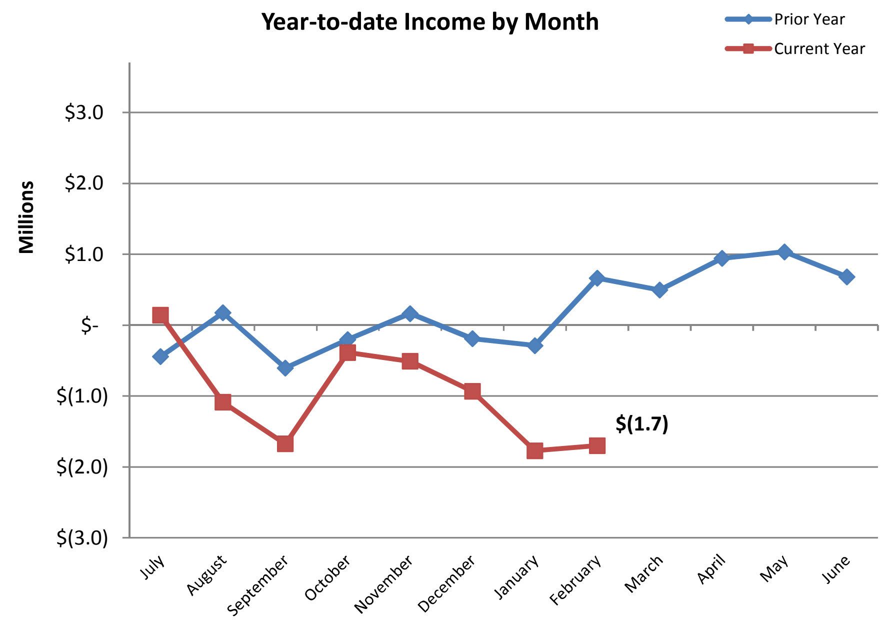


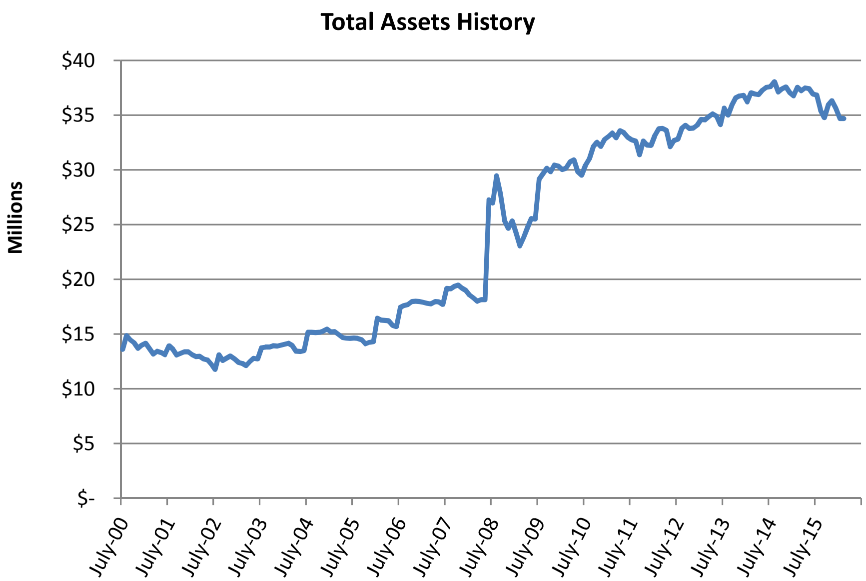


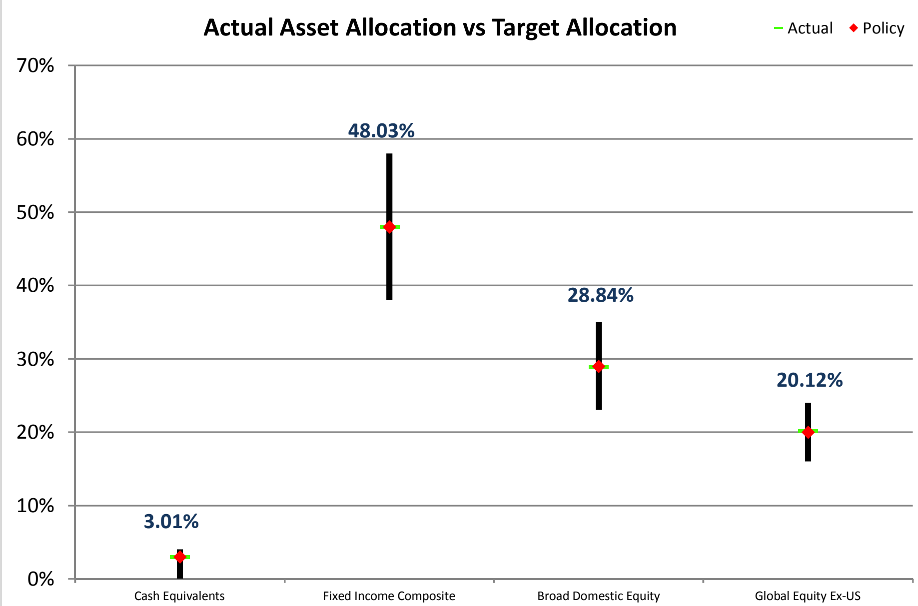
Military Retirement Trust Fund

For the Eight Months Ending February 29, 2016









ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

All Non-Participant Directed Plans

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)
Cash					
Short-Term Fixed Income Pool	$ 591,261,114	$ 159,544	$ (162,625,974)	$ 428,794,684	-27.48%
Total Cash	591,261,114	159,544	(162,625,974)	428,794,684	-27.48%
Fixed Income					
US Treasury Fixed Income	1,360,094,477	7,244,892	(250,000,000)	1,117,339,369	-17.85%
Taxable Municipal Bond Pool					
Western Asset Management	122,939,966	1,629,781	-	124,569,747	1.33%
Guggenheim Partners	119,152,571	1,516,942	-	120,669,513	1.27%
	242,092,537	3,146,723	-	245,239,260	1.30%
Tactical Fixed Income Pool					
Pyramis Global Advisors	118,159,053	561,592	-	118,720,645	0.48%
International Fixed Income Pool					
Mondrian Investment Partners	370,700,464	10,486,378	-	381,186,842	2.83%
High Yield Pool					
MacKay Shields, LLC	279,372,204	950,916	(23,179,107)	257,144,013	-7.96%
Pyramis Global Advisors High Yield CMBS	83,562,729	(1,432,308)	30,000,000	112,130,421	34.19%
Columbia Threadneedle	-	4,041,256	200,000,000	204,041,256	100.00%
Eaton Vance High Yield	199,337,180	2,845,997	-	202,183,177	1.43%
	562,272,113	6,405,861	206,820,893	775,498,867	
Emerging Debt Pool					
Lazard Emerging Income	151,608,366	1,476,508	-	153,084,874	0.97%
Total Fixed Income	2,804,927,010	29,321,954	(43,179,107)	2,791,069,857	-0.49%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

Domestic Equities					
Small Cap Pool					
Passively Managed					
SSgA Russell 2000 Growth	16,134,074	(111,710)	-	16,022,364	-0.69%
SSgA Russell 2000 Value	27,477,046	174,250	-	27,651,296	0.63%
Total Passive	43,611,120	62,540	-	43,673,660	0.14%
Actively Managed					
Barrow, Haney, Mewhinney & Strauss	76,358,625	643,496	-	77,002,121	0.84%
DePrince, Race & Zollo Inc.- Micro Cap	67,646,106	923,513	-	68,569,619	1.37%
Frontier Capital Mgmt. Co.	79,780,726	1,624,649	-	81,405,375	2.04%
Jennison Associates, LLC	75,793,294	(17,934)	-	75,775,360	-0.02%
Lord Abbett Small Cap Growth Fund	67,904,003	(1,752,049)	-	66,151,954	-2.58%
Lord Abbett & Co.- Micro Cap	69,264,677	(3,060,546)	-	66,204,131	-4.42%
Luther King Capital Management	71,827,831	(1,102,929)	-	70,724,902	-1.54%
SSgA Futures Small Cap	10,160,491	6,510	-	10,167,001	0.06%
Transition Account	38,936	15	-	38,951	0.04%
Sycamore Capital	88,236,843	695,256	-	88,932,099	0.79%
SSgA Volatility-Russell 2000	75,225,454	1,325,226	-	76,550,680	1.76%
Zebra Capital Management	66,802,305	(349,626)	-	66,452,679	-0.52%
Total Active	749,039,291	(1,064,419)	-	747,974,872	-0.14%
Total Small Cap	792,650,411	(1,001,879)	-	791,648,532	-0.13%
Large Cap Pool					
Passively Managed					
SSgA Russell 1000 Growth	1,053,614,587	(414,848)	-	1,053,199,739	-0.04%
SSgA Russell 1000 Value	1,091,077,835	(465,501)	(100,541,379)	990,070,955	-9.26%
SSgA Russell 200	752,980,720	(3,679,642)	-	749,301,078	-0.49%
Total Passive	2,897,673,142	(4,559,991)	(100,541,379)	2,792,571,772	-3.63%
Actively Managed					
Allianz Global Investors	326,299,616	(2,934,646)	-	323,364,970	-0.90%
Barrow, Haney, Mewhinney & Strauss	325,604,144	(3,612,785)	-	321,991,359	-1.11%
Lazard Freres	363,067,022	(1,592,187)	-	361,474,835	-0.44%
McKinley Capital Mgmt.	329,414,773	(8,351,037)	-	321,063,736	-2.54%
Quantitative Management Assoc.	308,791,978	1,053,509	-	309,845,487	0.34%
SSgA Futures large cap	13,545,831	(11)	-	13,545,820	0.00%
Transition Account	4,592	349,187	100,541,379	100,895,158	2197094.21%
SSgA Volatility-Russell 1000	100,989,784	2,314,805	-	103,304,589	2.29%
Internally Managed Large Cap.	202,876,788	2,688,185	-	205,564,973	1.33%
Total Active	1,970,594,528	(10,084,980)	100,541,379	2,061,050,927	4.59%
Total Large Cap	4,868,267,670	(14,644,971)	-	4,853,622,699	-0.30%
Total Domestic Equity	5,660,918,081	(15,646,850)	-	5,645,271,231	-0.28%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

Alternative Equity Strategies					
Alternative Equity Strategy Pool					
Relational Investors, LLC	1,080,762	-	-	1,080,762	-
Analytic Buy Write Account	280,661,285	4,036,568	-	284,697,853	1.44%
Allianz Global Investors Buy-Write Account	-	-	-	-	-
Quantitative Management Associates MPS	188,665,286	3,252,779	-	191,918,065	1.72%
ARMB Equity Yield Strategy	249,797,561	1,915,958	-	251,713,519	0.77%
Alternative Equity Strategies Transition Account	10	-	-	10	-
Total Alternative Equity Strategy Pool	720,204,904	9,205,305	-	729,410,209	1.28%
Convertible Bond Pool					
Advent Capital	184,726,937	974,203	-	185,701,140	0.53%
Total Alternative Equity Strategies	904,931,841	10,179,508	-	915,111,349	1.12%
Global Equities Ex US					
Small Cap Pool					
Mondrian Investment Partners	143,599,955	1,018,690	-	144,618,645	0.71%
Schroder Investment Management	157,160,258	(1,958,878)	-	155,201,380	-1.25%
Total Small Cap	300,760,213	(940,188)	-	299,820,025	-0.31%
Large Cap Pool					
Blackrock ACWI Ex-US IMI	463,087,067	(1,321,618)	200,000,000	661,765,449	42.90%
Brandes Investment Partners	691,159,331	(10,046,367)	-	681,112,964	-1.45%
Cap Guardian Trust Co	680,468,159	3,781,030	-	684,249,189	0.56%
Lazard Freres	355,663,827	(5,183,619)	-	350,480,208	-1.46%
McKinley Capital Management	466,262,810	(10,400,075)	-	455,862,735	-2.23%
SSgA Futures International	-	-	-	-	-
Allianz Global Investors	294,428,427	(6,651,773)	-	287,776,654	-2.26%
Arrow Street Capital	271,678,969	(4,130,699)	-	267,548,270	-1.52%
Baillie Gifford Overseas Limited	337,639,354	691,513	-	338,330,867	0.20%
State Street Global Advisors	718,319,880	(6,686,263)	-	711,633,617	-0.93%
Total Large Cap	4,278,707,824	(39,947,871)	200,000,000	4,438,759,953	3.74%
Emerging Markets Equity Pool					
Lazard Asset Management	295,617,670	(5,654,508)	-	289,963,162	-1.91%
Eaton Vance	204,064,562	1,848,558	-	205,913,120	0.91%
Total Emerging Markets Pool	499,682,232	(3,805,950)	-	495,876,282	-0.76%
Frontier Market Pool					
Everest Capital Frontier Markets Equity	-	-	-	-	-
Total Global Equities	5,079,150,269	(44,694,009)	200,000,000	5,234,456,260	3.06%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

Private Equity Pool					
Abbott Capital	764,974,783	7,679,627	(2,436,032)	770,218,378	0.69%
Angelo, Gordon & Co.	3,983,990	(18,214)	-	3,965,776	-0.46%
Blum Capital Partners-Strategic	40,961	(40,961)	-	-	-100.00%
Lexington Partners VII	41,277,593	-	315,916	41,593,509	0.77%
Merit Capital Partners	16,155,212	1	1,428,571	17,583,784	8.84%
NB SOF III	20,285,648	-	-	20,285,648	-
Resolute Fund III	5,549,542	-	76,308	5,625,850	1.38%
Glendon Opportunities	22,901,465	-	2,000,000	24,901,465	8.73%
New Mountain Partners IV	10,411,106	-	-	10,411,106	-
KKR Lending Partners II	33,859,730	1,180,972	-	35,040,702	3.49%
NGP XI	5,318,432	-	888,207	6,206,639	16.70%
Lexington Capital Partners VIII	7,935,755	-	683,937	8,619,692	8.62%
Onex Partnership III	22,581,893	-	38,271	22,620,164	0.17%
Pathway Capital Management LLC	814,236,753	8,608,245	(5,866)	822,839,132	1.06%
Warburg Pincus Prvt Eqty XI	28,609,118	-	300,000	28,909,118	1.05%
Warburg Pincus X	16,359,326	-	-	16,359,326	-
Warburg Pincus Prvt Eqty XII	1,007,500	-	747,500	1,755,000	74.19%
Total Private Equity	1,815,488,807	17,409,670	4,036,812	1,836,935,289	1.18%
Absolute Return Pool					
Global Asset Management (USA) Inc.	362,777,043	(2,707,526)	(10,000,000)	350,069,517	-3.50%
Prisma Capital Partners	441,190,321	(4,143,484)	2,225,000	439,271,837	-0.43%
Crestline Investors, Inc.	275,257,785	-	6,506,975	281,764,760	2.36%
Allianz Global Investors	219,785,303	(1,129,194)	-	218,656,109	-0.51%
Crestline Specialty Fund	12,001,500	-	2,382,896	14,384,396	19.85%
KKR Apex equity Fund	96,150,269	(3,888,467)	-	92,261,802	-4.04%
Total Absolute Return Investments	1,407,162,221	(11,868,671)	1,114,871	1,396,408,421	-0.76%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

Real Assets					
Farmland Pool					
UBS Agrivest, LLC	539,133,626	5,812,181	-	544,945,807	1.08%
Hancock Agricultural Investment Group	245,770,672	2,199,006	-	247,969,678	0.89%
Total Farmland Pool	784,904,298	8,011,187	-	792,915,485	1.02%
Timber Pool					
Timberland Invt Resource LLC	276,462,959	221,153	13,248,434	289,932,546	4.87%
Hancock Natural Resource Group	101,386,449	-	-	101,386,449	-
Total Timber Pool	377,849,408	221,153	13,248,434	391,318,995	3.56%
Energy Pool					
EIG Energy Fund XV	27,945,726	-	2,068,164	30,013,890	7.40%
EIG Energy Fund XD	5,936,717	-	-	5,936,717	-
EIG Energy Fund XIV-A	31,279,647	(13,034,103)	-	18,245,544	-41.67%
EIG Energy Fund XVI	20,926,982	-	841,983	21,768,965	4.02%
Total Energy Pool	86,089,072	(13,034,103)	2,910,147	75,965,116	-11.76%
REIT Pool					
REIT Trans Account	-	-	-	-	-
REIT Holdings	344,667,559	(1,575,483)	-	343,092,076	-0.46%
Total REIT Pool	344,667,559	(1,575,483)	-	343,092,076	-0.46%
Treasury Inflation Proof Securities					
TIPS Internally Managed Account	53,049,866	611,366	-	53,661,232	1.15%
Master Limited Partnerships					
Advisory Research MLP	149,249,899	(2,716,092)	-	146,533,807	-1.82%
Tortoise Capital Advisors	183,260,134	4,437,178	-	187,697,312	2.42%
Total Master Limited Partnerships	332,510,033	1,721,086	-	334,231,119	0.52%
Infrastructure Private Pool					
IFM Global Infrastructuer Fund-Private	207,659,950	(4,248,286)	-	203,411,664	-2.05%
JP Morgan Infrastructure Fund-Private	97,670,727	36,412	-	97,707,139	0.04%
Total Infrastructure Private Pool	305,330,677	(4,211,874)	-	301,118,803	-1.38%
Infrastructure Public Pool					
Brookfield Investment Mgmt.-Public	81,425,378	417,858	-	81,843,236	0.51%
Lazard Asset Mgmt.-Public	103,035,940	1,926,681	-	104,962,621	1.87%
Total Infrastructure Public Pool	184,461,318	2,344,539	-	186,805,857	1.27%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended February 29, 2016

Real Estate					
Core Commingled Accounts					
JP Morgan	233,894,952	1,205,067	-	235,100,019	0.52%
UBS Trumbull Property Fund	95,932,795	-	-	95,932,795	-
Total Core Commingled	329,827,747	1,205,067	-	331,032,814	0.37%
Core Separate Accounts					
LaSalle Investment Management	206,815,475	(250,682)	1,651,635	208,216,428	0.68%
Sentinel Separate Account	211,575,258	-	(726,663)	210,848,595	-0.34%
UBS Realty	451,389,074	-	(915,374)	450,473,700	-0.20%
Total Core Separate	869,779,807	(250,682)	9,598	869,538,723	-0.03%
Non-Core Commingled Accounts					
Almanac Realty Securities IV	55,552	-	-	55,552	-
Almanac Realty Securities V	10,657,980	-	-	10,657,980	-
Almanac Realty Securities VII	10,967,204	-	(219,859)	10,747,345	-2.00%
BlackRock Diamond Property Fund	7,417,082	-	-	7,417,082	-
Colony Investors VIII, L.P.	14,883,530	-	-	14,883,530	-
Cornerstone Apartment Venture III	48,170	-	-	48,170	-
Coventry	-	-	-	-	-
ING Clarion Development Ventures III	4,857,094	5,678,953	(697)	10,535,350	116.91%
ING Clarion Development Ventures IIII	12,935,783	1,333,662	-	14,269,445	10.31%
KKR Real Estate Partners Americas LP.	41,352,297	-	-	41,352,297	-
LaSalle Medical Office Fund II	227,869	-	-	227,869	-
Lowe Hospitality Partners	870,535	125,001	-	995,536	14.36%
Silverpeak Legacy Pension Partners II, L.P.	48,220,446	-	(27,167,624)	21,052,822	-56.34%
Silverpeak Legacy Pension Partners III, L.P.	7,289,207	-	-	7,289,207	-
Tishman Speyer Real Estate Venture VI	35,766,474	-	-	35,766,474	-
Tishman Speyer Real Estate Venture VII	7,840,561	-	-	7,840,561	-
Total Non-Core Commingled	203,389,784	7,137,616	(27,388,180)	183,139,220	-9.96%
Total Real Estate	1,402,997,338	8,092,001	(27,378,582)	1,383,710,757	-1.37%
Total Real Assets	3,871,859,569	2,179,872	(11,220,001)	3,862,819,440	-0.23%
Total Assets	$ 22,135,698,912	$ (12,958,982)	$ (11,873,399)	$ 22,110,866,531	-0.11%

ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

Participant Directed Plans

Supplemental Annuity Plan
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
February 29, 2016

Participant Options	Beginning Invested Assets	Investment Income	Net Contributions (Withdrawals)	Transfers In (Out)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (2)
T. Rowe Price							
Stable Value Fund	$ 362,394,207	$ 633,206	$ (1,405,335)	$ 3,936,768	$ 365,558,846	0.87%	0.17%
Small Cap Stock Fund	110,769,627	140,854	25,984	(1,537,279)	109,399,186	-1.24%	0.13%
Alaska Balanced Trust	1,120,763,908	504,189	(2,661,749)	(2,582,190)	1,116,024,158	-0.42%	0.05%
Long Term Balanced Fund	505,559,054	(1,328,142)	624,151	(2,269,157)	502,585,906	-0.59%	-0.26%
AK Target Date 2010 Trust	8,679,050	(364)	15,669	540,897	9,235,252	6.41%	0.00%
AK Target Date 2015 Trust	87,009,389	(170,341)	(646,303)	(711,440)	85,481,305	-1.76%	-0.20%
AK Target Date 2020 Trust	67,668,895	(172,752)	156,198	337,488	67,989,829	0.47%	-0.25%
AK Target Date 2025 Trust	44,669,891	(154,885)	400,991	(261,579)	44,654,418	-0.03%	-0.35%
AK Target Date 2030 Trust	32,171,455	(136,807)	410,966	(186,749)	32,258,865	0.27%	-0.42%
AK Target Date 2035 Trust	29,194,548	(132,819)	398,739	78,547	29,539,015	1.18%	-0.45%
AK Target Date 2040 Trust	29,204,692	(160,357)	357,284	(278,282)	29,123,337	-0.28%	-0.55%
AK Target Date 2045 Trust	31,263,276	(174,012)	566,317	(340,967)	31,314,614	0.16%	-0.55%
AK Target Date 2050 Trust	34,855,263	(181,251)	509,571	89,889	35,273,472	1.20%	-0.52%
AK Target Date 2055 Trust	25,848,705	(139,271)	555,105	(299,404)	25,965,135	0.45%	-0.54%
AK Target Date 2060 Trust	11,904	(13)	(1,588)	(9,645)	658	-94.47%	-0.21%
Total Investments with T. Rowe Price	2,490,063,864	(1,472,765)	(694,000)	(3,493,103)	2,484,403,996		
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	38,061,664	4,921	(310,737)	711,406	38,467,254	1.07%	0.01%
S&P 500 Stock Index Fund Series A	314,553,122	(443,647)	(643,243)	785,112	314,251,344	-0.10%	-0.14%
Russell 3000 Index	69,418,926	10,420	75,606	1,654,308	71,159,260	2.51%	0.01%
US Real Estate Investment Trust Index	38,991,135	(391,058)	112,796	(743,718)	37,969,155	-2.62%	-1.01%
World Equity Ex-US Index	27,843,912	(527,536)	116,059	83,656	27,516,091	-1.18%	-1.89%
Long US Treasury Bond Index	19,602,949	587,803	(42,636)	1,913,687	22,061,803	12.54%	2.86%
US Treasury Inflation Protected Securities Index	19,677,163	221,401	(146,821)	439,804	20,191,547	2.61%	1.12%
World Government Bond Ex-US Index	6,885,283	262,756	(78,500)	(165,214)	6,904,325	0.28%	3.88%
Global Balanced Fund	49,847,323	10,273	(29,741)	(1,187,953)	48,639,902	-2.42%	0.02%
Total Investments with SSGA	584,881,477	(264,667)	(947,217)	3,491,088	587,160,681		
BlackRock							
Government/Credit Bond Fund	43,842,863	339,248	36,884	(941,314)	43,277,681	-1.29%	0.78%
Intermediate Bond Fund	27,303,626	142,006	(131,412)	1,826,825	29,141,045	6.73%	0.50%
Total Investments with Barclays Global Investors	71,146,489	481,254	(94,528)	885,511	72,418,726		
Brandes/Allianz (3)							
AK International Equity Fund	55,129,924	(1,245,235)	93,754	(383,045)	53,595,398	-2.78%	-2.26%
RCM							
Sustainable Core Opportunities Fund	37,274,473	(499,668)	10,163	(500,451)	36,284,517	-2.66%	-1.35%
Total All Funds	$ 3,238,496,227	$ (3,001,081)	$ (1,631,828)	$ -	$ 3,233,863,318	-0.14%	-0.09%

Notes: Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(3) This investment is comprised of two funds, Brandes International Equity Fund and Allianz NFJ International Fund
effective March 30, 2015.

Supplemental Annuity Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
February 29, 2016
$ (Thousands)

Invested Assets (at fair value)	July	August	September	October	November	December	January	February
Investments with T. Rowe Price								
Stable Value Fund	$ 346,173	$ 349,359	$ 353,495	$ 358,781	$ 359,982	$ 356,998	$ 362,394	$ 365,559
Small Cap Stock Fund	134,022	124,649	118,122	124,929	127,388	123,141	110,770	109,399
Alaska Balanced Trust	1,175,887	1,148,636	1,135,435	1,157,835	1,152,917	1,137,863	1,120,764	1,116,024
Long Term Balanced Fund	543,965	521,768	513,749	536,244	534,645	525,287	505,559	502,586
AK Target Date 2010 Trust	9,263	9,073	9,163	9,182	9,279	8,986	8,679	9,235
AK Target Date 2015 Trust	96,167	92,443	90,970	92,548	91,357	89,748	87,009	85,481
AK Target Date 2020 Trust	69,848	67,574	66,283	70,567	70,391	69,930	67,669	67,990
AK Target Date 2025 Trust	46,272	44,542	43,606	46,763	47,068	46,640	44,670	44,654
AK Target Date 2030 Trust	34,476	31,731	31,350	32,457	32,909	33,677	32,171	32,259
AK Target Date 2035 Trust	29,802	27,945	27,613	29,693	30,255	30,625	29,195	29,539
AK Target Date 2040 Trust	30,048	28,735	28,633	30,673	31,053	31,190	29,205	29,123
AK Target Date 2045 Trust	32,463	30,614	30,292	32,414	32,959	33,033	31,263	31,315
AK Target Date 2050 Trust	34,657	33,343	33,473	35,770	36,254	36,524	34,855	35,273
AK Target Date 2055 Trust	26,703	24,989	25,569	27,109	27,532	27,397	25,849	25,965
AK Target Date 2060 Trust	-	-	-	-	1	1	12	1
State Street Global Advisors								
State Street Treasury Money Market Fund - Inst.	38,582	39,465	39,088	38,296	37,742	38,297	38,062	38,467
S&P 500 Stock Index Fund Series A	346,334	324,294	316,038	339,138	340,350	336,619	314,553	314,251
Russell 3000 Index	66,039	61,815	60,645	65,986	68,536	70,863	69,419	71,159
US Real Estate Investment Trust Index	36,332	33,999	34,429	38,592	38,058	41,033	38,991	37,969
World Equity Ex-US Index	30,072	28,858	28,932	32,272	31,008	29,858	27,844	27,516
Long US Treasury Bond Index	13,012	16,355	15,263	15,291	14,557	14,582	19,603	22,062
US Treasury Inflation Protected Securities Index	14,943	14,809	14,871	14,898	16,033	17,551	19,677	20,192
World Government Bond Ex-US Index	10,659	10,877	10,754	10,066	8,915	8,066	6,885	6,904
Global Balanced Fund	59,906	56,837	55,119	57,365	56,332	53,818	49,847	48,640
Investments with BlackRock								
Government/Credit Bond Fund	53,260	53,143	53,599	53,271	50,588	46,861	43,843	43,278
Intermediate Bond Fund	12,158	12,343	12,939	13,610	17,430	21,883	27,304	29,141
Investments with Brandes/Allianz Institutional								
AK International Equity Fund	76,997	68,179	62,209	65,935	63,451	60,442	55,130	53,595
Investments with RCM								
Sustainable Core Opportunities Fund	41,359	37,985	37,652	41,233	41,522	40,374	37,274	36,285
Total Invested Assets	**$ 3,409,401**	**$ 3,294,359**	**$ 3,249,291**	**$ 3,370,916**	**$ 3,368,514**	**$ 3,331,285**	**$ 3,238,496**	**$ 3,233,863**
Change in Invested Assets								
Beginning Assets	$ 3,394,334	$ 3,409,401	$ 3,294,359	$ 3,249,291	$ 3,370,916	$ 3,368,514	$ 3,331,285	$ 3,238,496
Investment Earnings	26,325	(115,035)	(47,085)	127,585	(420)	(39,662)	(82,268)	(3,001)
Net Contributions (Withdrawals)	(11,258)	(7)	2,016	(5,960)	(1,982)	2,433	(10,521)	(1,632)
Ending Invested Assets	**$ 3,409,401**	**$ 3,294,359**	**$ 3,249,291**	**$ 3,370,916**	**$ 3,368,514**	**$ 3,331,285**	**$ 3,238,496**	**$ 3,233,863**

Source data provided by the record keeper, Great West Life.

Deferred Compensation Plan
Schedule of Invested Assets and Changes in Invested Assets
for the Month Ended
February 29, 2016

Participant Options	Beginning Invested Assets	Investment Income	Net Contributions (Withdrawals)	Transfers In (Out)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (1)
T. Rowe Price							
Interest Income Fund	$ 180,298,990	$ 355,360	$ (332,191)	$ 813,656	$ 181,135,815	0.46%	0.20%
Small Cap Stock Fund	79,601,679	126,297	252,104	(594,256)	79,385,824	-0.27%	0.16%
Alaska Balanced Trust	19,376,276	13,747	154,651	619,728	20,164,402	4.07%	0.07%
Long Term Balanced Fund	47,061,582	(128,006)	15,589	(891,694)	46,057,471	-2.13%	-0.27%
AK Target Date 2010 Trust	2,991,521	(295)	26,882	86,418	3,104,526	3.78%	-0.01%
AK Target Date 2015 Trust	9,532,697	(16,607)	81,015	13,768	9,610,873	0.82%	-0.17%
AK Target Date 2020 Trust	16,011,724	(37,476)	242,044	110,385	16,326,677	1.97%	-0.23%
AK Target Date 2025 Trust	8,816,368	(29,407)	175,380	(126,398)	8,835,943	0.22%	-0.33%
AK Target Date 2030 Trust	5,651,076	(21,594)	129,366	14,489	5,773,337	2.16%	-0.38%
AK Target Date 2035 Trust	3,529,007	(18,515)	110,325	(124,192)	3,496,625	-0.92%	-0.53%
AK Target Date 2040 Trust	3,884,135	(20,658)	103,794	(30,521)	3,936,750	1.35%	-0.53%
AK Target Date 2045 Trust	2,571,042	(14,855)	103,170	(89,029)	2,570,328	-0.03%	-0.58%
AK Target Date 2050 Trust	1,679,523	(8,065)	64,761	46,669	1,782,888	6.15%	-0.46%
AK Target Date 2055 Trust	2,504,679	(7,415)	65,437	(25,785)	2,536,916	1.29%	-0.29%
AK Target Date 2060 Trust	10,307	(315)	900	53,523	64,415	524.96%	-0.84%
Total Investments with T. Rowe Price	383,520,606	192,196	1,193,227	(123,239)	384,782,790		
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	11,676,075	1,498	2,302	9,967	11,689,842	0.12%	0.01%
Russell 3000 Index	26,023,922	1,539	261,863	295,949	26,583,273	2.15%	0.01%
US Real Estate Investment Trust Index	13,408,966	(120,669)	126,386	82,158	13,496,841	0.66%	-0.89%
World Equity Ex-US Index	9,238,371	(177,655)	131,881	(104,117)	9,088,480	-1.62%	-1.92%
Long US Treasury Bond Index	6,257,189	196,433	26,550	1,166,144	7,646,316	22.20%	2.87%
US Treasury Inflation Protected Securities Index	8,979,760	99,391	51,536	(90,806)	9,039,881	0.67%	1.11%
World Government Bond Ex-US Index	3,155,029	123,438	14,556	(109,657)	3,183,366	0.90%	3.97%
Global Balanced Fund	35,921,543	14,267	111,646	(354,207)	35,693,249	-0.64%	0.04%
Total Investments with SSGA	114,660,855	138,242	726,720	895,431	116,421,248		
BlackRock							
S&P 500 Index Fund	170,360,018	(210,562)	534,012	(6,277)	170,677,191	0.19%	-0.12%
Government/Credit Bond Fund	27,560,600	216,149	(20,347)	(391,313)	27,365,089	-0.71%	0.79%
Intermediate Bond Fund	18,593,040	95,070	29,925	397,540	19,115,575	2.81%	0.51%
Total Investments with Barclays Global Investors	216,513,658	100,657	543,590	(50)	217,157,855		
Brandes/Allianz (2)							
AK International Equity Fund	34,029,570	(762,524)	203,313	(617,894)	32,852,465	-3.46%	-2.25%
RCM							
Sustainable Core Opportunities Fund	15,710,087	(208,630)	131,071	(154,248)	15,478,280	-1.48%	-1.33%
Total All Funds	$ 764,434,776	$ (540,059)	$ 2,797,921	$ -	$ 766,692,638	0.30%	-0.07%

Notes: Source data provided by the record keeper, Great West Life.
(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(2) This investment is comprised of two funds, 50% Brandes International equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Deferred Compensation Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
February 29, 2016
$ (Thousands)

Invested Assets (at fair value)	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**
Investments with T. Rowe Price								
Interest Income Fund								
Cash and cash equivalents	$ 9,454	$ 7,141	$ 7,495	$ 7,607	$ 6,820	$ 6,877	$ 6,461	$ 6,636
Synthetic Investment Contracts	170,674	171,907	172,294	172,712	173,106	173,670	173,838	174,499
Small Cap Stock Fund	95,872	89,472	85,029	89,696	91,500	87,213	79,602	79,386
Alaska Balanced Trust	16,896	17,514	17,525	17,781	18,051	18,879	19,376	20,164
Long Term Balanced Fund	51,174	49,279	48,483	51,599	51,047	49,303	47,062	46,057
AK Target Date 2010 Trust	3,137	3,055	3,156	3,017	3,116	3,076	2,992	3,105
AK Target Date 2015 Trust	11,155	10,564	10,372	10,206	10,287	10,209	9,533	9,611
AK Target Date 2020 Trust	16,856	16,146	15,477	16,371	16,452	16,434	16,012	16,327
AK Target Date 2025 Trust	8,868	8,443	8,321	8,936	9,094	9,131	8,816	8,836
AK Target Date 2030 Trust	6,016	6,035	5,712	5,882	6,075	6,166	5,651	5,773
AK Target Date 2035 Trust	3,684	3,483	3,456	3,711	3,710	3,691	3,529	3,497
AK Target Date 2040 Trust	3,954	3,729	3,537	3,814	3,927	3,978	3,884	3,937
AK Target Date 2045 Trust	2,593	2,428	2,459	2,650	2,764	2,746	2,571	2,570
AK Target Date 2050 Trust	1,787	1,602	1,595	1,719	1,784	1,776	1,680	1,783
AK Target Date 2055 Trust	3,089	2,637	2,938	2,742	3,186	2,964	2,505	2,537
AK Target Date 2060 Trust	-	-	-	-	28	31	10	64
State Street Global Advisors								
State Street Treasury Money Market Fund - Inst.	12,621	12,541	11,627	12,012	12,047	12,088	11,676	11,690
Russell 3000 Index	24,500	23,382	23,103	25,385	26,081	26,688	26,024	26,583
US Real Estate Investment Trust Index	12,682	12,099	12,273	13,387	13,736	14,302	13,409	13,497
World Equity Ex-US Index	10,720	10,172	10,062	11,104	10,475	9,950	9,238	9,088
Long US Treasury Bond Index	4,426	4,997	4,958	4,806	4,586	4,731	6,257	7,646
US Treasury Inflation Protected Securities Index	7,286	7,210	7,149	7,090	7,490	8,129	8,980	9,040
World Government Bond Ex-US Index	3,813	3,887	4,271	3,751	3,622	3,400	3,155	3,183
Global Balanced Fund	40,816	39,218	37,958	39,392	38,671	37,697	35,922	35,693
Investments with BlackRock								
S&P 500 Index Fund	183,818	172,869	168,239	181,818	183,514	180,093	170,360	170,677
Government/Credit Bond Fund	30,447	30,169	30,318	29,953	29,439	28,178	27,561	27,365
Intermediate Bond Fund	14,747	14,658	15,195	14,786	15,842	17,000	18,593	19,116
Investments with Brandes/Allianz								
AK International Equity Fund	44,643	40,645	37,578	39,902	38,718	36,914	34,030	32,852
Investments with RCM								
Sustainable Opportunities Fund	17,575	16,336	16,263	17,607	17,741	16,924	15,710	15,478
Total Invested Assets	**$ 813,302**	**$ 781,618**	**$ 766,840**	**$ 799,437**	**$ 802,908**	**$ 792,238**	**$ 764,435**	**$ 766,693**
Change in Invested Assets								
Beginning Assets	$ 806,279	$ 813,302	$ 781,618	$ 766,840	$ 799,437	$ 802,908	$ 792,238	$ 764,435
Investment Earnings	6,564	(30,580)	(14,275)	34,927	1,708	(10,601)	(25,232)	(540)
Net Contributions (Withdrawals)	460	(1,105)	(502)	(2,331)	1,764	(70)	(2,571)	2,798
Ending Invested Assets	**$ 813,302**	**$ 781,618**	**$ 766,840**	**$ 799,437**	**$ 802,908**	**$ 792,238**	**$ 764,435**	**$ 766,693**

Source data provided by the record keeper, Great West Life.

Defined Contribution Retirement - Participant Directed PERS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
February 29, 2016

Participant Options	Beginning Invested Assets	Investment Income	Net Contributions (Withdrawals)	Transfers In (Out)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income (2)
T. Rowe Price							
Alaska Money Market	$ 7,356,497	$ 1,475	$ 66,576	$ 337,111	$ 7,761,659	5.51%	0.02%
Small Cap Stock Fund	48,138,607	119,103	488,625	703,287	49,449,622	2.72%	0.24%
Alaska Balanced Trust	12,183,619	15,736	82,463	1,002,039	13,283,857	9.03%	0.12%
Long Term Balanced Fund	11,554,429	(60,537)	64,339	(2,141,324)	9,416,907	-18.50%	-0.58%
AK Target Date 2010 Trust	1,850,270	(1,200)	38,978	(724)	1,887,324	2.00%	-0.06%
AK Target Date 2015 Trust	8,304,305	(13,611)	116,734	-	8,407,428	1.24%	-0.16%
AK Target Date 2020 Trust	18,517,291	(45,932)	431,065	(48,196)	18,854,228	1.82%	-0.25%
AK Target Date 2025 Trust	26,574,503	(85,962)	721,148	(83,956)	27,125,733	2.07%	-0.32%
AK Target Date 2030 Trust	27,623,168	(106,296)	625,016	7,615	28,149,503	1.91%	-0.38%
AK Target Date 2035 Trust	31,549,759	(144,828)	886,977	(146,862)	32,145,046	1.89%	-0.45%
AK Target Date 2040 Trust	37,837,716	(194,072)	902,757	(78,550)	38,467,851	1.67%	-0.51%
AK Target Date 2045 Trust	46,413,661	(234,546)	1,283,512	(19,793)	47,442,834	2.22%	-0.50%
AK Target Date 2050 Trust	54,841,276	(276,037)	1,440,699	(24,097)	55,981,841	2.08%	-0.50%
AK Target Date 2055 Trust	33,961,028	(165,543)	1,496,003	(92,806)	35,198,682	3.64%	-0.48%
AK Target Date 2060 Trust	19,772	(8)	119	(19,285)	598	-96.98%	-0.08%
Total Investments with T. Rowe Price	366,725,901	(1,192,258)	8,645,011	(605,541)	373,573,113		
State Street Global Advisors							
Money Market	2,932,248	376	(150,940)	248,017	3,029,701	3.32%	0.01%
S&P 500 Stock Index Fund Series A	34,800,322	(17,412)	342,999	970,831	36,096,740	3.73%	-0.05%
Russell 3000 Index	44,108,390	29,008	453,791	1,331,167	45,922,356	4.11%	0.06%
US Real Estate Investment Trust Index	13,198,539	(110,415)	130,967	508,753	13,727,844	4.01%	-0.82%
World Equity Ex-US Index	35,871,452	(681,346)	347,858	33,910	35,571,874	-0.84%	-1.89%
Long US Treasury Bond Index	1,180,422	34,687	16,284	176,988	1,408,381	19.31%	2.72%
US Treasury Inflation Protected Securities Index	7,571,395	91,426	30,740	709,996	8,403,557	10.99%	1.15%
World Government Bond Ex-US Index	4,379,598	167,988	(6,327)	(651,548)	3,889,711	-11.19%	4.15%
Global Balanced Fund	7,986,995	(22,838)	45,443	(1,967,998)	6,041,602	-24.36%	-0.33%
Total Investments with SSGA	152,029,361	(508,526)	1,210,815	1,360,116	154,091,766		
BlackRock							
Government/Credit Bond Fund	29,853,853	227,118	50,437	(2,204,620)	27,926,788	-6.45%	0.79%
Intermediate Bond Fund	7,048,827	36,942	46,015	1,311,899	8,443,683	19.79%	0.48%
Total Investments with Barclays Global Investors	36,902,680	264,060	96,452	(892,721)	36,370,471		
Brandes/Allianz (3)							
AK International Equity Fund	25,356,902	(570,736)	291,310	101,269	25,178,745	-0.70%	-2.23%
RCM							
Sustainable Core Opportunities Fund	2,768,582	(34,345)	46,185	36,877	2,817,299	1.76%	-1.22%
Total All Funds	$ 583,783,426	$ (2,041,805)	$ 10,289,773	$ -	$ 592,031,394	1.41%	-0.35%

Notes:Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(3) This investment is comprised of two funds, 50% Brandes International Equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Defined Contribution Retirement - Participant Directed PERS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
February 29, 2016
$ (Thousands)

Invested Assets (at fair value)	**July**	**August**	**September**	**October**	**November**	**December**	**January**	**February**
Investments with T. Rowe Price								
Alaska Money Market	$ 5,125	$ 5,333	$ 5,576	$ 5,716	$ 5,983	$ 6,698	$ 7,356	$ 7,762
Small Cap Stock Fund	51,481	48,845	46,819	50,381	52,413	51,153	48,139	49,450
Alaska Balanced Trust	4,701	5,597	6,316	7,005	8,249	10,340	12,184	13,284
Long Term Balanced Fund	22,448	21,960	21,382	22,409	20,063	15,956	11,554	9,417
AK Target Date 2010 Trust	1,876	1,843	1,794	1,886	1,842	1,857	1,850	1,887
AK Target Date 2015 Trust	8,400	8,148	8,052	8,349	8,427	8,498	8,304	8,407
AK Target Date 2020 Trust	17,681	17,143	17,023	18,164	18,486	18,685	18,517	18,854
AK Target Date 2025 Trust	25,673	24,995	24,955	26,700	27,094	27,316	26,575	27,126
AK Target Date 2030 Trust	26,831	26,015	25,788	27,738	28,146	28,405	27,623	28,150
AK Target Date 2035 Trust	30,667	29,618	29,414	31,666	32,400	32,598	31,550	32,145
AK Target Date 2040 Trust	37,548	36,001	35,630	38,665	39,383	39,413	37,838	38,468
AK Target Date 2045 Trust	46,210	44,386	43,873	47,619	48,540	48,729	46,414	47,443
AK Target Date 2050 Trust	53,982	52,187	51,687	55,732	56,794	57,110	54,841	55,982
AK Target Date 2055 Trust	30,995	30,295	30,360	33,199	34,178	34,799	33,961	35,199
AK Target Date 2060 Trust	-	-	-	-	-	-	20	1
State Street Global Advisors								
Money Market	1,757	1,986	2,310	2,287	2,387	2,429	2,932	3,030
S&P 500 Stock Index Fund Series A	36,123	32,482	30,367	32,066	33,395	34,734	34,800	36,097
Russell 3000 Index	37,400	36,807	37,866	42,071	43,464	44,626	44,108	45,922
US Real Estate Investment Trust Index	9,872	9,347	9,608	10,195	10,934	12,527	13,199	13,728
World Equity Ex-US Index	30,991	31,994	34,048	38,477	38,176	37,530	35,871	35,572
Long US Treasury Bond Index	753	821	750	868	836	897	1,180	1,408
US Treasury Inflation Protected Securities Index	4,131	4,171	4,117	4,102	4,913	6,159	7,571	8,404
World Government Bond Ex-US Index	7,856	7,433	6,893	6,678	5,968	5,268	4,380	3,890
Global Balanced Fund	21,814	19,800	18,011	18,184	15,928	12,103	7,987	6,042
Investments with BlackRock								
Government/Credit Bond Fund	37,763	37,388	36,886	36,728	35,040	32,587	29,854	27,927
Intermediate Bond Fund	626	885	1,025	1,079	2,381	4,527	7,049	8,444
Investments with Brandes/Allianz								
International Equity Fund	34,231	29,679	26,160	27,340	27,164	26,744	25,357	25,179
Investments with RCM								
Sustainable Opportunities Fund	2,885	2,766	2,662	2,887	2,941	2,888	2,769	2,817
Total Invested Assets	**$ 589,820**	**$ 567,923**	**$ 559,374**	**$ 598,190**	**$ 605,524**	**$ 604,579**	**$ 583,783**	**$ 592,031**
Change in Invested Assets								
Beginning Assets	$ 582,369	$ 589,820	$ 567,923	$ 559,374	$ 598,190	$ 605,524	$ 604,579	$ 583,783
Investment Earnings	4,591	(30,149)	(14,791)	32,874	(334)	(11,359)	(26,325)	(2,042)
Net Contributions (Withdrawals)	2,860	8,252	6,242	5,942	7,668	10,414	5,529	10,290
Ending Invested Assets	**$ 589,820**	**$ 567,923**	**$ 559,374**	**$ 598,190**	**$ 605,524**	**$ 604,579**	**$ 583,783**	**$ 592,031**

Source data provided by the record keeper, Great West Life.

Defined Contribution Retirement - Participant Directed TRS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
February 29, 2016

Participant Options	**Beginning Invested Assets**	**Investment Income**	**Net Contributions (Withdrawals)**	**Transfers In (Out)**	**Ending Invested Assets**	**% Change in Invested Assets**	**% Change due to Investment Income (2)**
T. Rowe Price							
Alaska Money Market	$ 2,483,216	$ 1,400	$ 6,207	$ 212,044	$ 2,702,867	8.85%	0.05%
Small Cap Stock Fund	20,188,946	54,861	151,563	419,834	20,815,204	3.10%	0.27%
Alaska Balanced Trust	5,855,087	6,257	29,028	370,153	6,260,525	6.92%	0.10%
Long Term Balanced Fund	5,551,547	(30,460)	25,799	(1,208,190)	4,338,696	-21.85%	-0.61%
AK Target Date 2010 Trust	327,589	(247)	7,343	-	334,685	2.17%	-0.07%
AK Target Date 2015 Trust	2,258,601	(3,903)	29,735	-	2,284,433	1.14%	-0.17%
AK Target Date 2020 Trust	5,584,572	(16,866)	829	(25,000)	5,543,535	-0.73%	-0.30%
AK Target Date 2025 Trust	8,579,190	(28,198)	81,895	-	8,632,887	0.63%	-0.33%
AK Target Date 2030 Trust	9,088,569	(33,895)	227,178	-	9,281,852	2.13%	-0.37%
AK Target Date 2035 Trust	13,701,313	(61,181)	322,774	-	13,962,906	1.91%	-0.44%
AK Target Date 2040 Trust	14,659,877	(73,973)	298,649	(108,534)	14,776,019	0.79%	-0.50%
AK Target Date 2045 Trust	23,741,213	(121,124)	449,310	(5,592)	24,063,807	1.36%	-0.51%
AK Target Date 2050 Trust	32,963,984	(166,186)	611,112	-	33,408,910	1.35%	-0.50%
AK Target Date 2055 Trust	9,498,199	(44,407)	375,528	(6,550)	9,822,770	3.42%	-0.46%
AK Target Date 2060 Trust	-	(17)	-	3,022	3,005	100.00%	-1.13%
Total Investments with T. Rowe Price	154,481,903	(517,939)	2,616,950	(348,813)	156,232,101		
State Street Global Advisors							
Money Market	259,240	33	2,639	(1)	261,911	1.03%	0.01%
S&P 500 Stock Index Fund Series A	13,432,728	(1,136)	119,157	611,653	14,162,402	5.43%	-0.01%
Russell 3000 Index	18,531,283	14,412	133,689	658,019	19,337,403	4.35%	0.08%
US Real Estate Investment Trust Index	5,140,858	(40,325)	32,797	254,134	5,387,464	4.80%	-0.76%
World Equity Ex-US Index	15,201,421	(286,079)	104,545	239,147	15,259,034	0.38%	-1.86%
Long US Treasury Bond Index	205,946	6,158	3,219	2,926	218,249	5.97%	2.95%
US Treasury Inflation Protected Securities Index	2,935,389	35,015	(14,304)	261,589	3,217,689	9.62%	1.14%
World Government Bond Ex-US Index	2,096,922	80,280	8,978	(286,238)	1,899,942	-9.39%	4.10%
Global Balanced Fund	3,991,541	(11,273)	19,652	(1,014,090)	2,985,830	-25.20%	-0.32%
Total Investments with SSGA	61,795,328	(202,915)	410,372	727,139	62,729,924		
BlackRock							
Government/Credit Bond Fund	13,979,147	106,257	45,026	(1,029,925)	13,100,505	-6.29%	0.79%
Intermediate Bond Fund	2,422,003	12,761	(18,585)	472,225	2,888,404	19.26%	0.48%
Total Investments with Barclays Global Investors	16,401,150	119,018	26,441	(557,700)	15,988,909		
Brandes/Allianz Institutional (3)							
AK International Equity Fund	10,318,078	(230,509)	85,365	179,374	10,352,308	0.33%	-2.21%
RCM							
Sustainable Core Opportunities Fund	1,108,201	(14,284)	12,479	-	1,106,396	-0.16%	-1.28%
Total All Funds	$ 244,104,660	$ (846,629)	$ 3,151,607	$ -	$ 246,409,638	0.94%	-0.34%

Notes: Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(3) This investment option is comprised of two funds, 50% Brandes International equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Defined Contribution Retirement - Participant Directed TRS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
February 29, 2016
$ (Thousands)

Invested Assets (at fair value)	July	August	September	October	November	December	January	February
Investments with T. Rowe Price								
Alaska Money Market	$ 1,691	$ 1,690	$ 1,656	$ 1,681	$ 1,865	$ 2,144	$ 2,483	$ 2,703
Small Cap Stock Fund	21,277	19,928	19,044	20,572	21,539	21,188	20,189	20,815
Alaska Balanced Trust	2,159	2,764	3,252	3,608	4,012	5,010	5,855	6,261
Long Term Balanced Fund	11,012	11,042	11,135	11,922	10,633	8,096	5,552	4,339
AK Target Date 2010 Trust	388	303	300	325	333	325	328	335
AK Target Date 2015 Trust	2,316	2,207	2,174	2,316	2,362	2,277	2,259	2,284
AK Target Date 2020 Trust	5,500	5,252	5,209	5,575	5,684	5,700	5,585	5,544
AK Target Date 2025 Trust	8,424	7,978	7,890	8,471	8,672	8,723	8,579	8,633
AK Target Date 2030 Trust	8,968	8,487	8,300	9,049	9,281	9,349	9,089	9,282
AK Target Date 2035 Trust	13,706	12,986	12,794	13,923	14,209	14,108	13,701	13,963
AK Target Date 2040 Trust	14,850	13,918	13,643	14,874	15,139	15,116	14,660	14,776
AK Target Date 2045 Trust	24,442	23,028	22,553	24,510	24,834	24,715	23,741	24,064
AK Target Date 2050 Trust	33,920	31,700	30,932	33,567	34,138	34,093	32,964	33,409
AK Target Date 2055 Trust	8,737	8,207	8,063	8,975	9,381	9,561	9,498	9,823
AK Target Date 2060 Trust	-	-	-	-	-	3	-	3
State Street Global Advisors								
Money Market	233	300	241	251	304	256	259	262
S&P 500 Stock Index Fund Series A	12,971	11,501	10,569	11,181	12,004	12,986	13,433	14,162
Russell 3000 Index	15,454	14,924	15,180	16,786	17,510	18,279	18,531	19,337
US Real Estate Investment Trust Index	3,950	3,661	3,817	3,983	4,206	4,839	5,141	5,387
World Equity Ex-US Index	11,754	12,277	13,320	15,317	15,438	15,454	15,201	15,259
Long US Treasury Bond Index	182	191	194	200	187	197	206	218
US Treasury Inflation Protected Securities Index	1,678	1,641	1,614	1,615	1,945	2,442	2,935	3,218
World Government Bond Ex-US Index	3,798	3,573	3,281	3,110	2,737	2,417	2,097	1,900
Global Balanced Fund	10,909	9,998	9,252	9,472	8,360	6,138	3,992	2,986
Investments with BlackRock								
Government/Credit Bond Fund	18,405	17,999	17,671	17,372	16,479	15,152	13,979	13,101
Intermediate Bond Fund	119	170	212	175	731	1,616	2,422	2,888
Investments with Brandes/Allianz								
AK International Equity Fund	14,223	11,976	10,240	10,540	10,564	10,588	10,318	10,352
Investments with RCM								
Sustainable Opportunities Fund	1,131	1,036	1,022	1,139	1,158	1,161	1,108	1,106
Total Invested Assets	**$ 252,196**	**$ 238,736**	**$ 233,558**	**$ 250,509**	**$ 253,706**	**$ 251,934**	**$ 244,105**	**$ 246,410**

Change in Invested Assets	July	August	September	October	November	December	January	February
Beginning Assets	$ 250,086	$ 252,196	$ 238,736	$ 233,558	$ 250,509	$ 253,706	$ 251,934	$ 244,105
Investment Earnings	1,987	(12,676)	(6,144)	13,643	(144)	(4,739)	(11,031)	(847)
Net Contributions (Withdrawals)	123	(785)	966	3,308	3,342	2,967	3,201	3,152
Ending Invested Assets	**$ 252,196**	**$ 238,736**	**$ 233,558**	**$ 250,509**	**$ 253,706**	**$ 251,934**	**$ 244,105**	**$ 246,410**

Source data provided by the record keeper, Great West Life.

ALASKA RETIREMENT MANAGEMENT BOARD

FINANCIAL REPORT
(Supplement to the Treasury Division Report)

As of February 29, 2016

Prepared by the Division of Retirement & Benefits

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Eight Months Ending February 29, 2016

	Contributions				**Expenditures**				**Net**
	Contributions EE and ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	**Contributions/ (Withdrawals)**
Public Employees' Retirement System (PERS)									
Defined Benefit Plans:									
Retirement Trust	$ 218,171,927	$ 88,586,485	$ 12,726	$ 306,771,138	$ (437,342,303)	$ (6,984,879)	$ (3,963,247)	$ (448,290,429)	$ (141,519,291)
Retirement Health Care Trust	103,956,118	37,934,279	15,182,800	157,073,197	(264,517,125)	-	(26,343,463)	(290,860,588)	(133,787,391)
Total Defined Benefit Plans	322,128,045	126,520,764	15,195,526	463,844,335	(701,859,428)	(6,984,879)	(30,306,710)	(739,151,017)	(275,306,682)
Defined Contribution Plans:									
Participant Directed Retirement	80,696,779	-	-	80,696,779	-	(21,822,775)	(1,676,034)	(23,498,809)	57,197,970
Health Reimbursement Arrangement [(a)]	21,428,190	-	-	21,428,190	-	-	(41,118)	(41,118)	21,387,072
Retiree Medical Plan [(a)]	10,476,514	-	-	10,476,514	-	-	(25,531)	(25,531)	10,450,983
Occupational Death and Disability: [(a)]									
Public Employees	1,202,354	-	-	1,202,354	(83,047)	-	(13,679)	(96,726)	1,105,628
Police and Firefighters	816,117	-	-	816,117	(143,542)	-	(16,036)	(159,578)	656,539
Total Defined Contribution Plans	114,619,954	-	-	114,619,954	(226,589)	(21,822,775)	(1,772,398)	(23,821,762)	90,798,192
Total PERS	**436,747,999**	**126,520,764**	**15,195,526**	**578,464,289**	**(702,086,017)**	**(28,807,654)**	**(32,079,108)**	**(762,972,779)**	**(184,508,490)**
Teachers' Retirement System (TRS)									
Defined Benefit Plans:									
Retirement Trust	41,659,818	90,589,614	5,848	132,255,280	(261,265,006)	(1,623,449)	(7,293,785)	(270,182,240)	(137,926,960)
Retirement Health Care Trust	14,516,999	39,518,713	4,830,551	58,866,263	(80,643,703)	-	(10,151,290)	(90,794,993)	(31,928,730)
Total Defined Benefit Plans	56,176,817	130,108,327	4,836,399	191,121,543	(341,908,709)	(1,623,449)	(17,445,075)	(360,977,233)	(169,855,690)
Defined Contribution Plans:									
Participant Directed Retirement	23,907,326	-	131	23,907,457	-	(7,009,390)	(623,895)	(7,633,285)	16,274,172
Health Reimbursement Arrangement [(a)]	4,897,367	-	-	4,897,367	-	-	(13,285)	(13,285)	4,884,082
Retiree Medical Plan [(a)]	3,255,812	-	-	3,255,812	-	-	(21,963)	(21,963)	3,233,849
Occupational Death and Disability [(a)]	2,907	-	-	2,907	-	-	(20,603)	(20,603)	(17,696)
Total Defined Contribution Plans	32,063,412	-	131	32,063,543	-	(7,009,390)	(679,746)	(7,689,136)	24,374,407
Total TRS	**88,240,229**	**130,108,327**	**4,836,530**	**223,185,086**	**(341,908,709)**	**(8,632,839)**	**(18,124,821)**	**(368,666,369)**	**(145,481,283)**
Judicial Retirement System (JRS)									
Defined Benefit Plan Retirement Trust	3,976,098	5,890,788	-	9,866,886	(6,764,617)	-	(236,067)	(7,000,684)	2,866,202
Defined Benefit Retirement Health Care Trust	1,356,917	-	49,357	1,406,274	(1,437,729)	-	(126,993)	(1,564,722)	(158,448)
Total JRS	**5,333,015**	**5,890,788**	**49,357**	**11,273,160**	**(8,202,346)**	**-**	**(363,060)**	**(8,565,406)**	**2,707,754**
National Guard/Naval Militia Retirement System (NGNMRS)									
Defined Benefit Plan Retirement Trust [(a)]	734,500	-	-	734,500	(1,073,545)	-	(227,751)	(1,301,296)	(566,796)
Other Participant Directed Plans									
Supplemental Annuity Plan	105,495,756	-	200,499	105,696,255	(2,091,933)	(127,433,341)	(3,080,357)	(132,605,631)	(26,909,376)
Deferred Compensation Plan	29,008,096	-	77,158	29,085,254	-	(29,766,737)	(876,212)	(30,642,949)	(1,557,695)
Total All Funds	**665,559,595**	**262,519,879**	**20,359,070**	**948,438,544**	**(1,055,362,550)**	**(194,640,571)**	**(54,751,309)**	**(1,304,754,430)**	**(356,315,886)**
Total Non-Participant Directed	426,451,638	262,519,879	20,081,282	709,052,799	(1,053,270,617)	(8,608,328)	(48,494,811)	(1,110,373,756)	(401,320,957)
Total Participant Directed	239,107,957	-	277,788	239,385,745	(2,091,933)	(186,032,243)	(6,256,498)	(194,380,674)	45,005,071
Total All Funds	**$ 665,559,595**	**$ 262,519,879**	**$ 20,359,070**	**$ 948,438,544**	**$ (1,055,362,550)**	**$ (194,640,571)**	**$ (54,751,309)**	**$ (1,304,754,430)**	**$ (356,315,886)**

(a) Employer only contributions.

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Month Ended February 29, 2016

	Contributions				Expenditures				Net
	Contributions EE and ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	Contributions/ (Withdrawals)
Public Employees' Retirement System (PERS)									
Defined Benefit Plans:									
Retirement Trust	$ 33,608,129	$ -	$ 2,891	$ 33,611,020	$ (12,388,384)	$ (708,914)	$ (4,608,335)	$ (17,705,633)	$ 15,905,387
Retirement Health Care Trust	15,685,913	-	1,170	15,687,083	(33,806,375)	-	(4,463,405)	(38,269,780)	(22,582,697)
Total Defined Benefit Plans	49,294,042	-	4,061	49,298,103	(46,194,759)	(708,914)	(9,071,740)	(55,975,413)	(6,677,310)
Defined Contribution Plans:									
Participant Directed Retirement	12,616,741	-	-	12,616,741	-	(2,224,984)	(101,984)	(2,326,968)	10,289,773
Health Reimbursement Arrangement [(a)]	3,503,286	-	-	3,503,286	-	-	(535)	(535)	3,502,751
Retiree Medical Plan [(a)]	1,677,168	-	-	1,677,168	-	-	(7,518)	(7,518)	1,669,650
Occupational Death and Disability: [(a)]									
Public Employees	194,138	-	-	194,138	(9,372)	-	(32)	(9,404)	184,734
Police and Firefighters	125,091	-	-	125,091	(17,943)	-	(16)	(17,959)	107,132
Total Defined Contribution Plans	18,116,424	-	-	18,116,424	(27,315)	(2,224,984)	(110,085)	(2,362,384)	15,754,040
Total PERS	**67,410,466**	**-**	**4,061**	**67,414,527**	**(46,222,074)**	**(2,933,898)**	**(9,181,825)**	**(58,337,797)**	**9,076,730**
Teachers' Retirement System (TRS)									
Defined Benefit Plans:									
Retirement Trust	6,497,613	-	3,084	6,500,697	(6,391,330)	(164,029)	(2,621,755)	(9,177,114)	(2,676,417)
Retirement Health Care Trust	9,938,833	-	-	9,938,833	(10,231,128)	-	(9,390,367)	(19,621,495)	(9,682,662)
Total Defined Benefit Plans	16,436,446	-	3,084	16,439,530	(16,622,458)	(164,029)	(12,012,122)	(28,798,609)	(12,359,079)
Defined Contribution Plans:									
Participant Directed Retirement	3,974,391	-	-	3,974,391	-	(795,871)	(26,913)	(822,784)	3,151,607
Health Reimbursement Arrangement [(a)]	824,692	-	-	824,692	-	-	(162)	(162)	824,530
Retiree Medical Plan [(a)]	537,268	-	-	537,268	-	-	(7,446)	(7,446)	529,822
Occupational Death and Disability [(a)]	2,907	-	-	2,907	-	-	(2,917)	(2,917)	(10)
Total Defined Contribution Plans	5,339,258	-	-	5,339,258	-	(795,871)	(37,438)	(833,309)	4,505,949
Total TRS	**21,775,704**	**-**	**3,084**	**21,778,788**	**(16,622,458)**	**(959,900)**	**(12,049,560)**	**(29,631,918)**	**(7,853,130)**
Judicial Retirement System (JRS)									
Defined Benefit Plan Retirement Trust	702,792	-	-	702,792	(212,584)	-	(68,327)	(280,911)	421,881
Defined Benefit Retirement Health Care Trust	188,152	-	-	188,152	(177,518)	-	(15,258)	(192,776)	(4,624)
Total JRS	**890,944**	**-**	**-**	**890,944**	**(390,102)**	**-**	**(83,585)**	**(473,687)**	**417,257**
National Guard/Naval Militia Retirement System (NGNMRS)									
Defined Benefit Plan Retirement Trust [(a)]	-	-	-	-	(33,583)	-	(39,293)	(72,876)	(72,876)
Other Participant Directed Plans									
Supplemental Annuity Plan	13,641,716	-	-	13,641,716	(363,745)	(14,777,725)	(132,074)	(15,273,544)	(1,631,828)
Deferred Compensation Plan	5,575,329	-	-	5,575,329	-	(2,734,475)	(42,933)	(2,777,408)	2,797,921
Total All Funds	**109,294,159**	**-**	**7,145**	**109,301,304**	**(63,631,962)**	**(21,405,998)**	**-**	**(106,567,230)**	**2,734,074**
Total Non-Participant Directed	73,485,982	-	7,145	73,493,127	(63,268,217)	(872,943)	(21,225,366)	(85,366,526)	(11,873,399)
Total Participant Directed	35,808,177	-	-	35,808,177	(363,745)	(20,533,055)	(303,904)	(21,200,704)	14,607,473
Total All Funds	**$ 109,294,159**	**$ -**	**$ 7,145**	**$ 109,301,304**	**$ (63,631,962)**	**$ (21,405,998)**	**$ (21,529,270)**	**$ (106,567,230)**	**$ 2,734,074**

(a) Employer only contributions.

Notes for the DRB Supplement to the Treasury Report February 2016

This report is the DRB supplement to the Financial Report presented by the Treasury Division, and expands their "Net Contributions (Withdrawals)" column into contributions and expenditures. It shows contributions received from both employers and employees, contributions from the State of Alaska, and other non-investment income. It also breaks out expenditures into benefits, refunds & disbursements, and administrative & investment expenditures. The net amount of total contributions and total expenditures, presented as "Net Contributions (Withdrawals)", agrees with the same column in the Treasury Division Report. Page one shows the year-to-date totals for the first eight months of Fiscal Year 2016, while page two shows only the month of February 2016.

Highlights – On page one, for the **eight months** ending February 29, 2016:

- PERS DB Pension – Average employer and employee contributions of $27.3 million per month; benefit payments of approximately $54.7 million per month; refunds average $873 thousand with a HIGH of $1.5 million in January 2016 and a LOW of $429 thousand in October 2015. During the month of August, Treasury made FY15 true-up adjustments to investment expenditures, which decreased by $12.7 million. During the month of February about $49.1 million in benefit payments had not yet settled from invested assets as of the end of the month.

- PERS DB Healthcare – Average employer contributions of $13.0 million per month; other income from Rx rebates and similar of $15.2 million; benefit payments of approximately $33.1 million per month; and average Administrative and Investment expenditures of $3.3 million per month (DOR and DRB). During the month of August, Treasury made FY15 true-up adjustments to investment expenditures, which increased by $11.3 million.

- PERS DC Pension – Average employer and employee contributions of $10.1 million per month; participant disbursements average $2.7 million per month; and average Administrative and Investment expenditures of $210 thousand per month (DOR and DRB).

- PERS DC Health – For HRA, RMP, and OD&D, only employer contributions on behalf of participating employees; currently eleven (11) benefits are being paid from the Occupational Death & Disability plans; 5 are for Public Employees and 6 are for Police and Firefighters.

- TRS DB Pension - Average employer and employee contributions of $5.2 million per month; benefit payments of approximately $32.7 million per month; refunds average $203 thousand with a HIGH of $431 thousand in September 2015 and a LOW of $50 thousand in December 2015; and average Administrative and Investment expenditures of $912 thousand per month (DOR and DRB). During the month of February about $29.9 million in benefit payments had not yet settled from invested assets as of the end of the month.

- TRS DB Healthcare – Average employer contributions of $1.8 million per month; other income from Rx rebates and similar of $4.8 million; benefit payments of approximately $10.1 million per month; and average Administrative and Investment expenditures of $1.3 million per month (DOR and DRB).

- TRS DC Pension – Average employer and employee contributions of $3.0 million per month; participant disbursements average $876 thousand per month; and average Administrative and investment expenditures of $78 thousand per month (DOR and DRB).

- TRS DC Health – For HRA, RMP, and OD&D, only employer contributions on behalf of participating employees; currently no benefits paid from any category; and minor Administrative and Investment expenditures for each category (DOR and DRB).

- JRS Pension – Average employer and employee contributions of $497 thousand per month; benefit payments of approximately $846 thousand per month; and average Administrative and Investment expenditures of $30 thousand per month (DOR and DRB). During the month of February about $731 thousand in benefit payments had not yet settled from invested assets as of the end of the month.

- JRS Healthcare – Average employer contributions of $170 thousand per month; other income from Rx rebates and similar of $49 thousand; benefit payments of approximately $180 thousand per month; average Administrative and Investment expenditures of $16 thousand per month (DOR and DRB).

- NGNMRS – Annual contribution from DMVA in the amount of $734,500 was received in November; combination of lump-sum and monthly benefit payments of $134 thousand per month with a HIGH of $223 thousand in December 2015 and a LOW of $34 thousand in February 2016; and average Administrative and Investment expenditures of $28 thousand per month (DOR and DRB). During the month of February about $52 thousand in benefit payments had not yet settled from invested assets as of the end of the month.

- SBS – Average employer and employee contributions and transfers in of $13.2 million per month; benefit payments associated with the cafeteria plan are approximately $261 thousand per month. Participant disbursements average of $15.9 million per month with a HIGH of $19.4 million in July 2015 and a LOW of $13.6 million in October 2015; average Administrative and Investment expenditures of $385 thousand per month (DOR and DRB).

- Deferred Compensation – Average member-only contributions and transfers in of $3.6 million per month; participant disbursements average of $3.7 million per month; average Administrative and Investment expenditures of $110 thousand per month (DOR and DRB).

Highlights – On page two, activity for the **one month** ending February 29, 2016 only:

- PERS DB Pension – During the month of February about $49.1 million in benefit payments had been paid, but not yet settled from invested assets as of the end of the month.
- PERS DB Healthcare – nothing significant to report
- PERS DC Pension – nothing significant to report
- PERS DC Health – nothing significant to report
- TRS DB Pension – During the month of February about $29.9 million in benefit payments had been paid, but not yet settled from invested assets as of the end of the month.
- TRS DB Healthcare – nothing significant to report
- TRS DC Pension – nothing significant to report
- TRS DC Health – nothing significant to report
- JRS Pension – During the month of February about $731 thousand in benefit payments had been paid, but not yet settled from invested assets as of the end of the month.
- JRS Healthcare – nothing significant to report
- NGNMRS – During the month of February about $52 thousand in benefit payments had been paid, but not yet settled from invested assets as of the end of the month.
- SBS – nothing significant to report
- Deferred Compensation – nothing significant to report

If you have any questions or comments, please let me know.

Private Equity 2016 Tactical Plan

Staff Summary and Overview

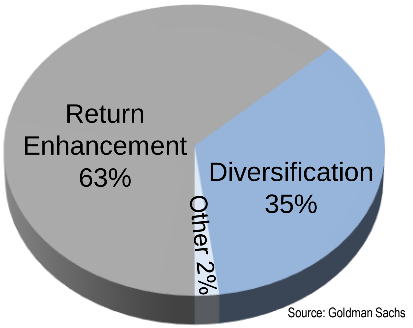
Zachary Hanna, CFA
State Investment Officer

ARMB Private Equity Program

- Private Equity Overview
- Market Review
- ARMB Portfolio
- Diversification
- 2015 Commitments
- 2016 Outlook & Tactical Plan

Overview – Private Equity Investment

- Private equity – unregistered investments in operating companies.
- Why do fund sponsors invest in private equity?



- Private equity is expected to deliver long-term returns in excess of the public markets.

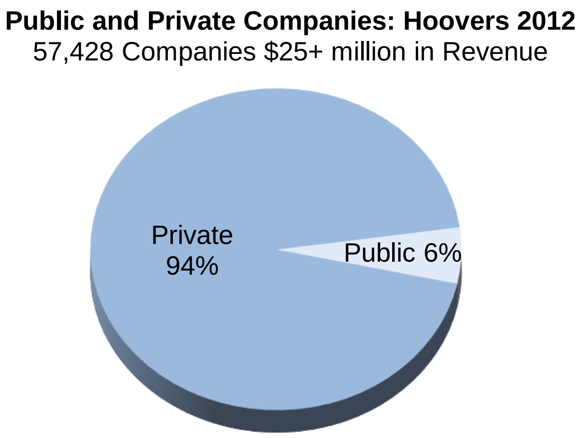
Private Equity Returns through September 30, 2015

Investment Type	5 Year	10 Year	20 Year
Venture Capital	18.0%	11.1%	25.5%
Growth Equity	12.8%	11.7%	14.3%
Buyouts	13.7%	11.8%	13.0%
Distressed	10.8%	9.8%	10.9%
All Private Equity	**13.8%**	**11.4%**	**14.0%**
Public Equity: Russell 3000	**15.8%**	**8.4%**	**9.8%**

Source: Thomson Reuters/Cambridge, McGraw Hill Financial - The private equity returns are pooled IRR's across all regions and do not represent top quartile returns. All Private Equity includes buyout, venture capital, growth equity, mezzanine and distressed. Russell 3000 returns are time-weighted and not directly comparable to IRR's.

Overview – Unique Characteristics

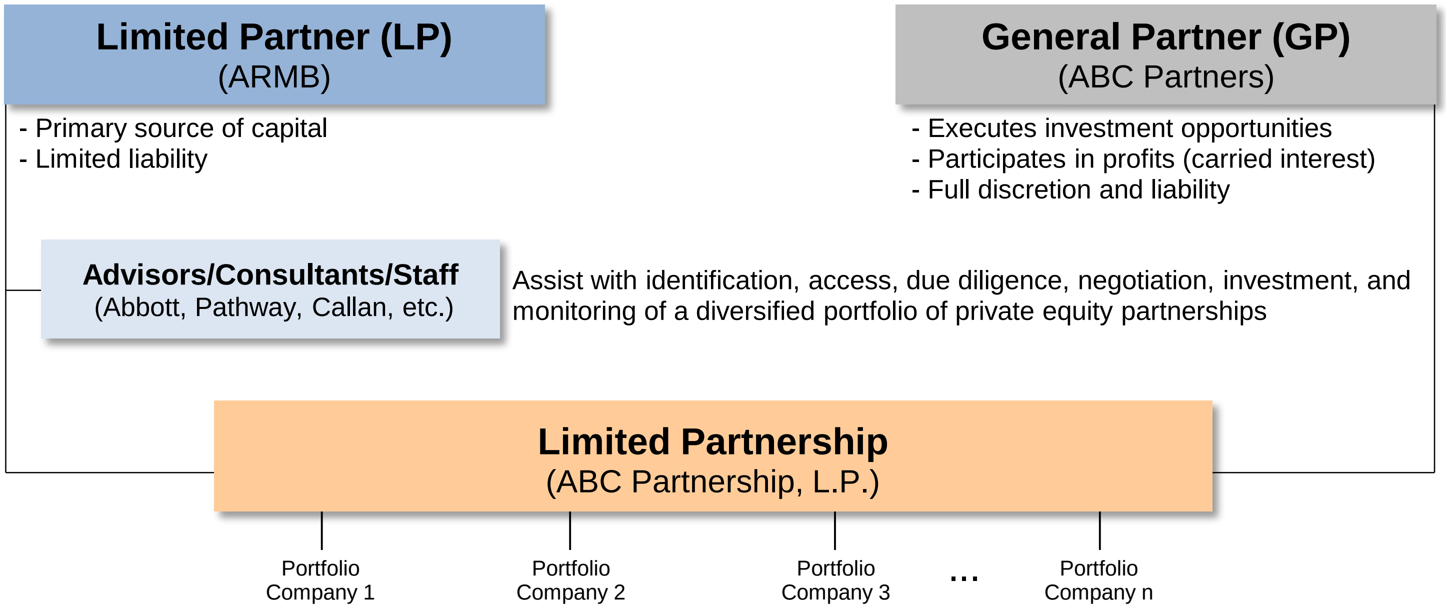
- Positive Characteristics:
  - Larger, more diverse investment universe
  - Less efficient companies – opportunity to create value
  - Less efficient markets – pricing opportunities
  - Control and alignment of interests
  - Managed for long-term value



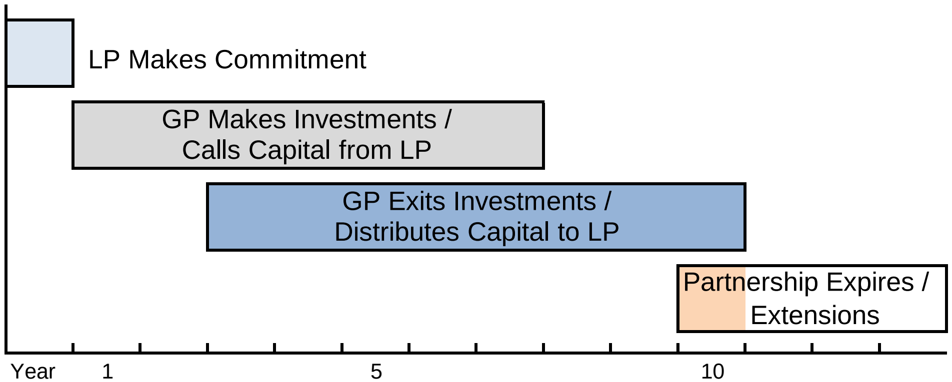
- Other Characteristics:
  - Illiquid, long-term investments
  - High fees and J-curve
  - Potential for high leverage
  - Portfolio transparency and valuation issues
  - Incomplete data and benchmarks

Overview – Structure

- Private equity investments are typically made through limited partnerships:



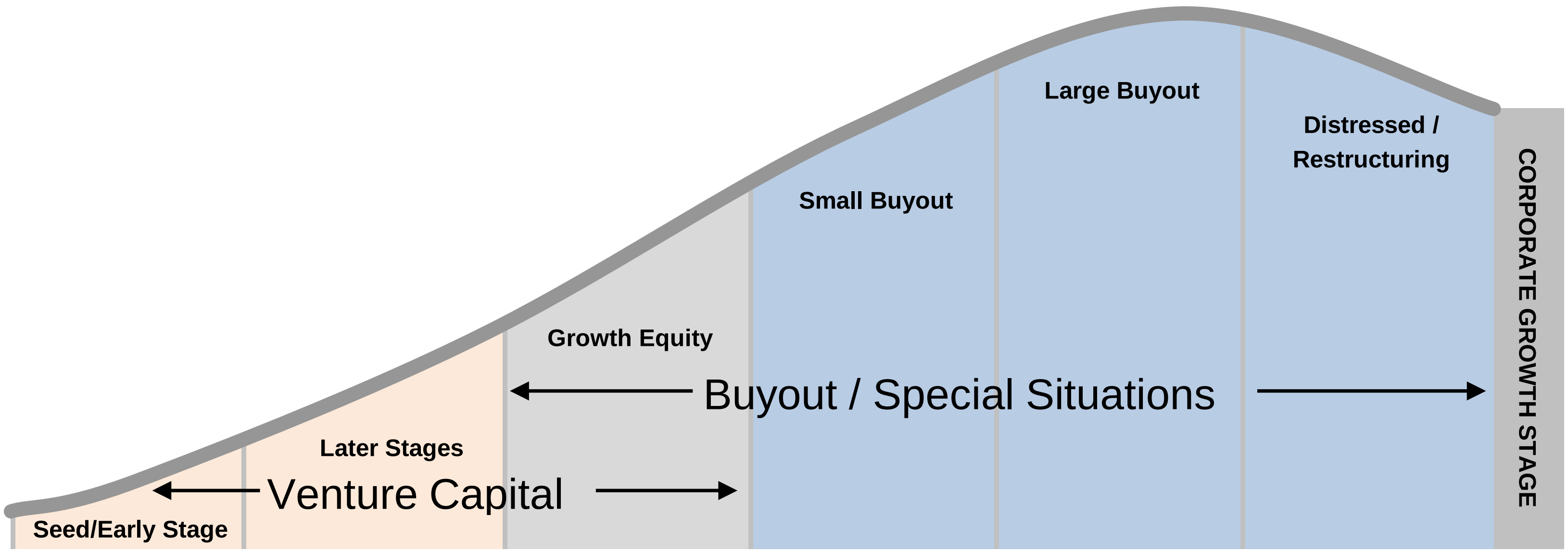
- Private equity liquidity and cash flow characteristics:



Overview – Primary Strategies

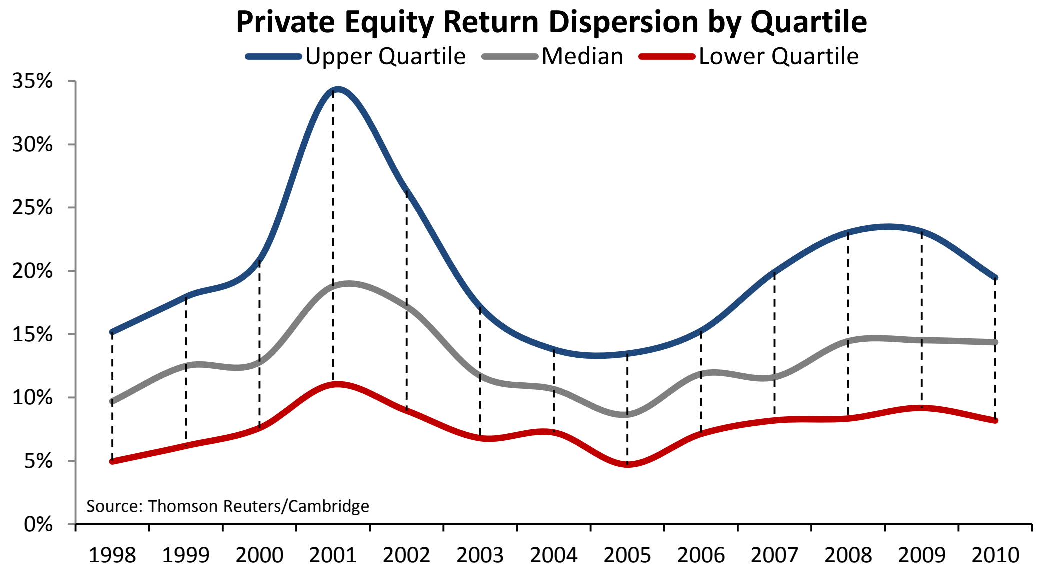
Private equity partnerships are classified into three primary groups:

Venture Capital	Investments in companies developing new products and services. Value creation focuses on managing entrepreneurial companies through high growth.
Buyout	Control investments in more mature operating companies. Value creation generally focuses on driving operational and capital structure efficiency.
Special Situations	Generally buyout style investments with a specialty focus; including groups that have a specific industry, investment style, or capital structure focus. Value creation focuses on specialized skills and efficiency.



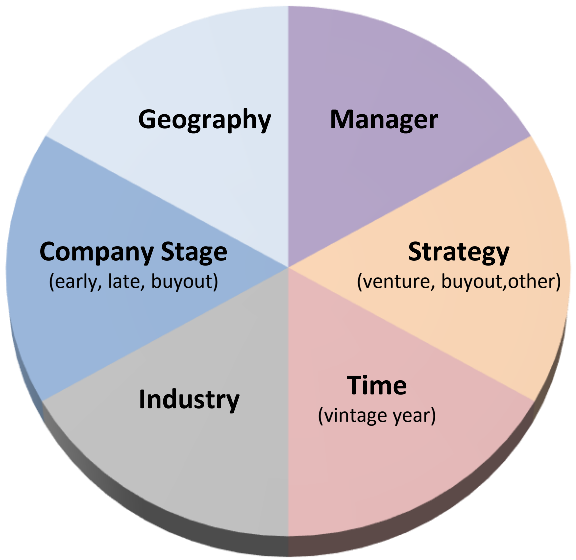
Private Equity Program Implementation

- Manager access, selection, and diligence are important. Investing consistently with high quality managers is critical.



- Long-term diversification is important.

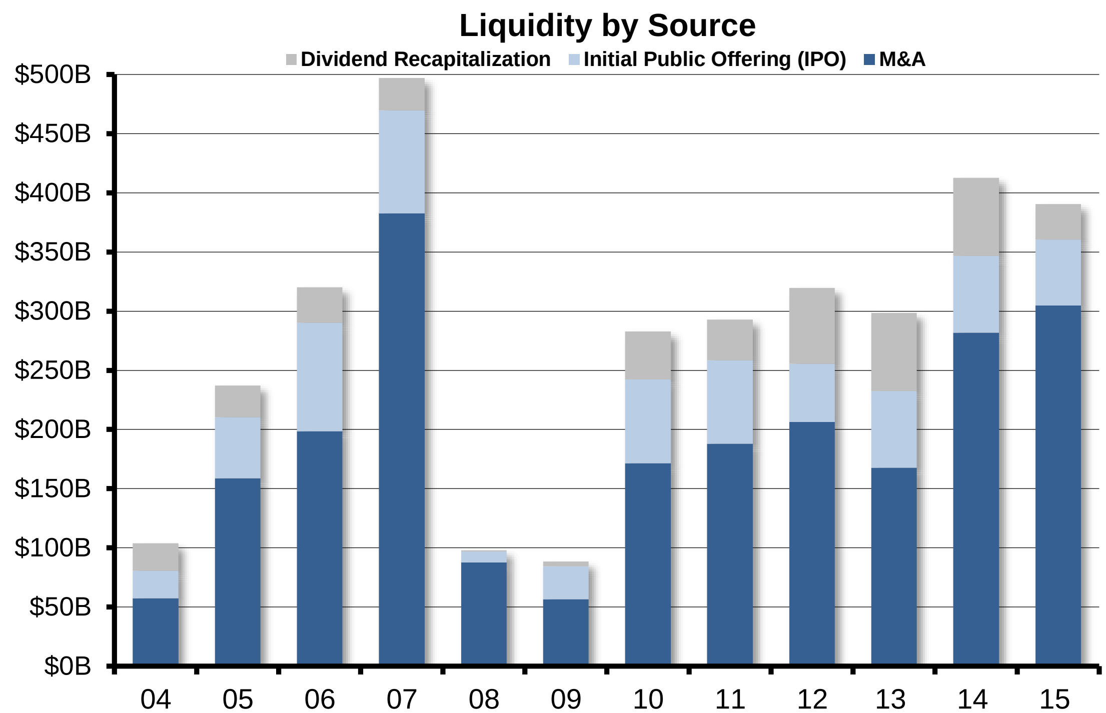
- The goal is to build a portfolio of quality partnerships diversified by strategy, industry, geography, company stage, manager, and time.



Market – Exit Opportunities

Private equity exit activity has been strong for six years, but decreased modestly in 2015

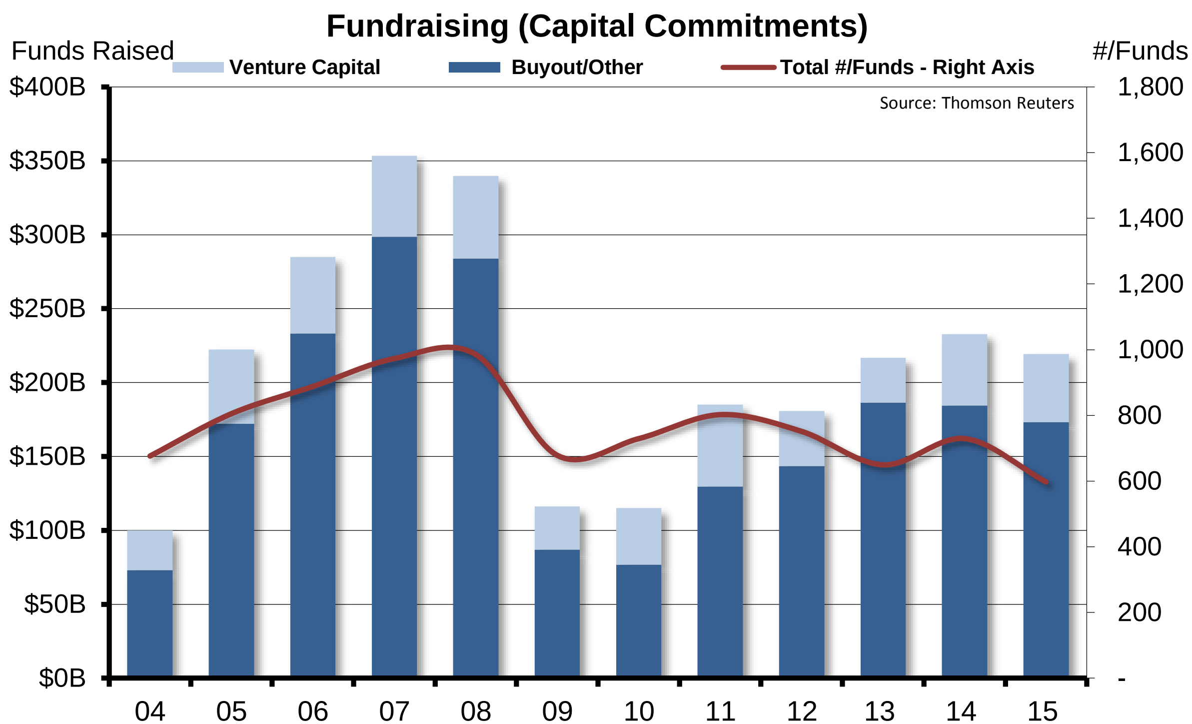
- Merger and acquisition activity increased to $305 billion
- Public market exits decreased to $53 billion
- Debt recapitalizations decreased from record levels to $30 billion



Source: Thomson Reuters & S&P. Global developed markets, except dividend recapitalization data which is U.S. only.

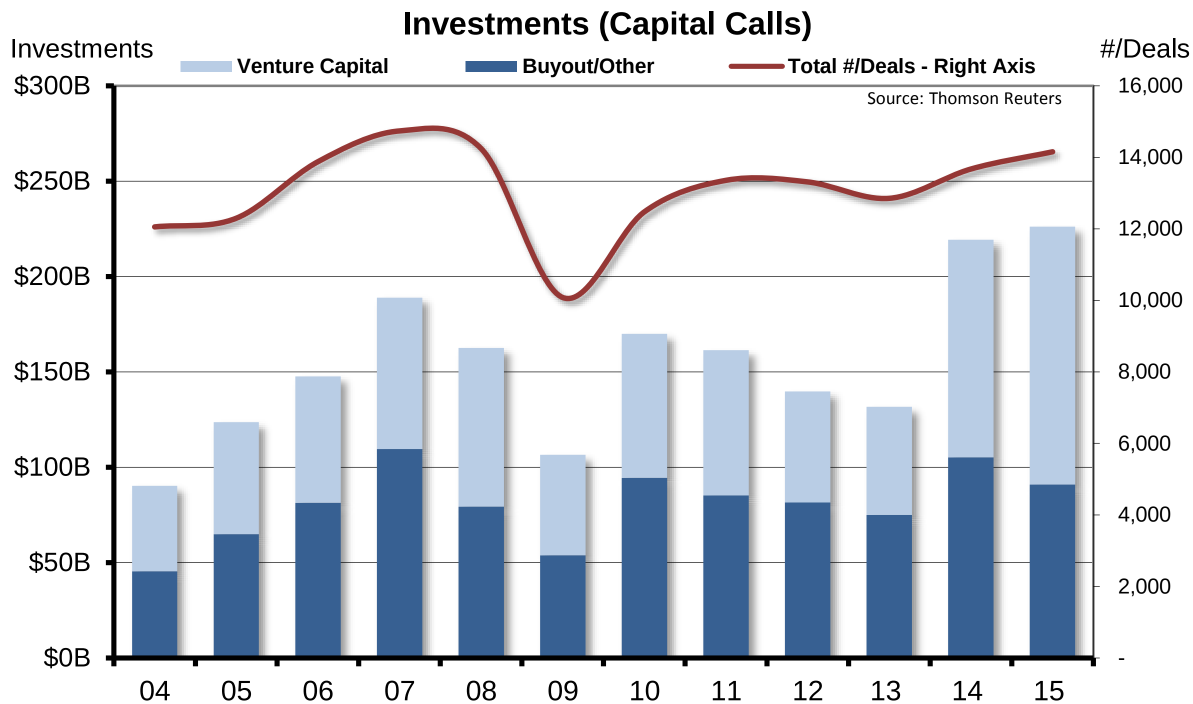
Market – Fundraising

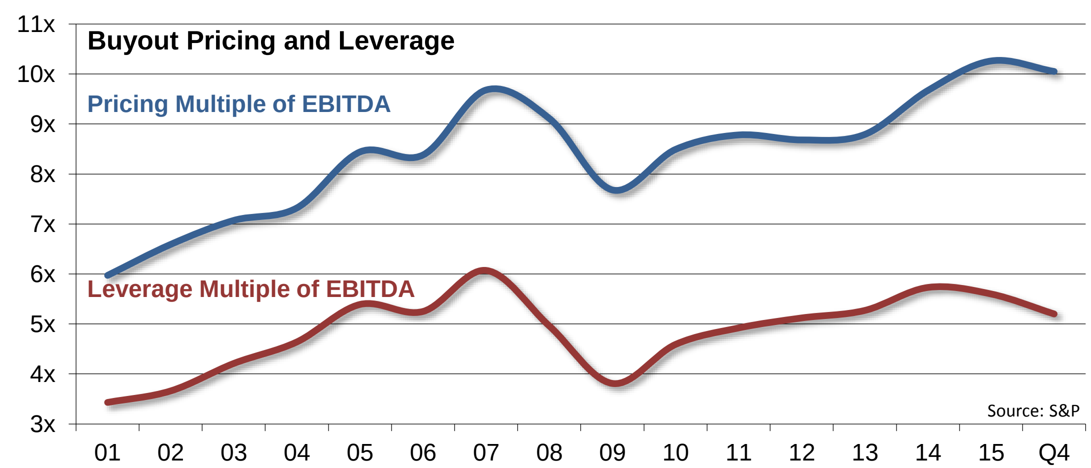
- Fundraising has stabilized, with a modest decrease in 2015
- Terms are balanced, but sought-after managers have increasing market power



Market – Investing

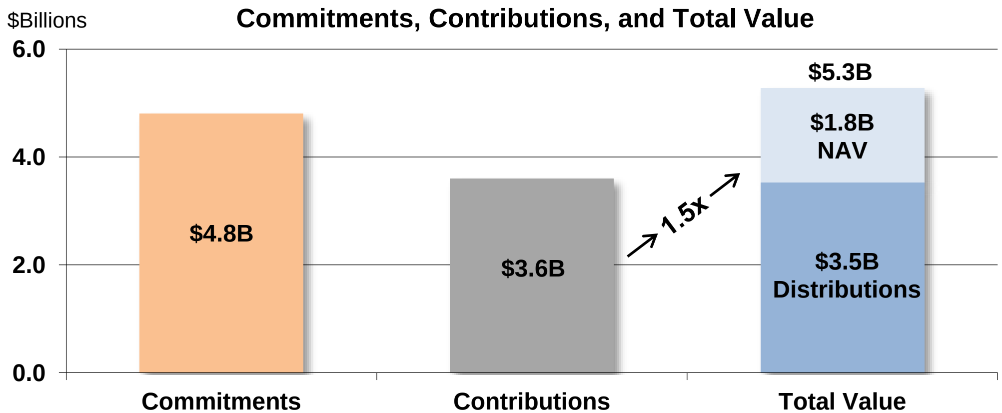
- There was a high level of investment activity for both buyout and venture funds as credit markets were accommodative and market participants were willing to transact at high prices
- Investment activity was roughly equal to fundraising levels – dry powder remained the same overall
- Deal pricing and leverage peaked in 2015, but decreased at year-end





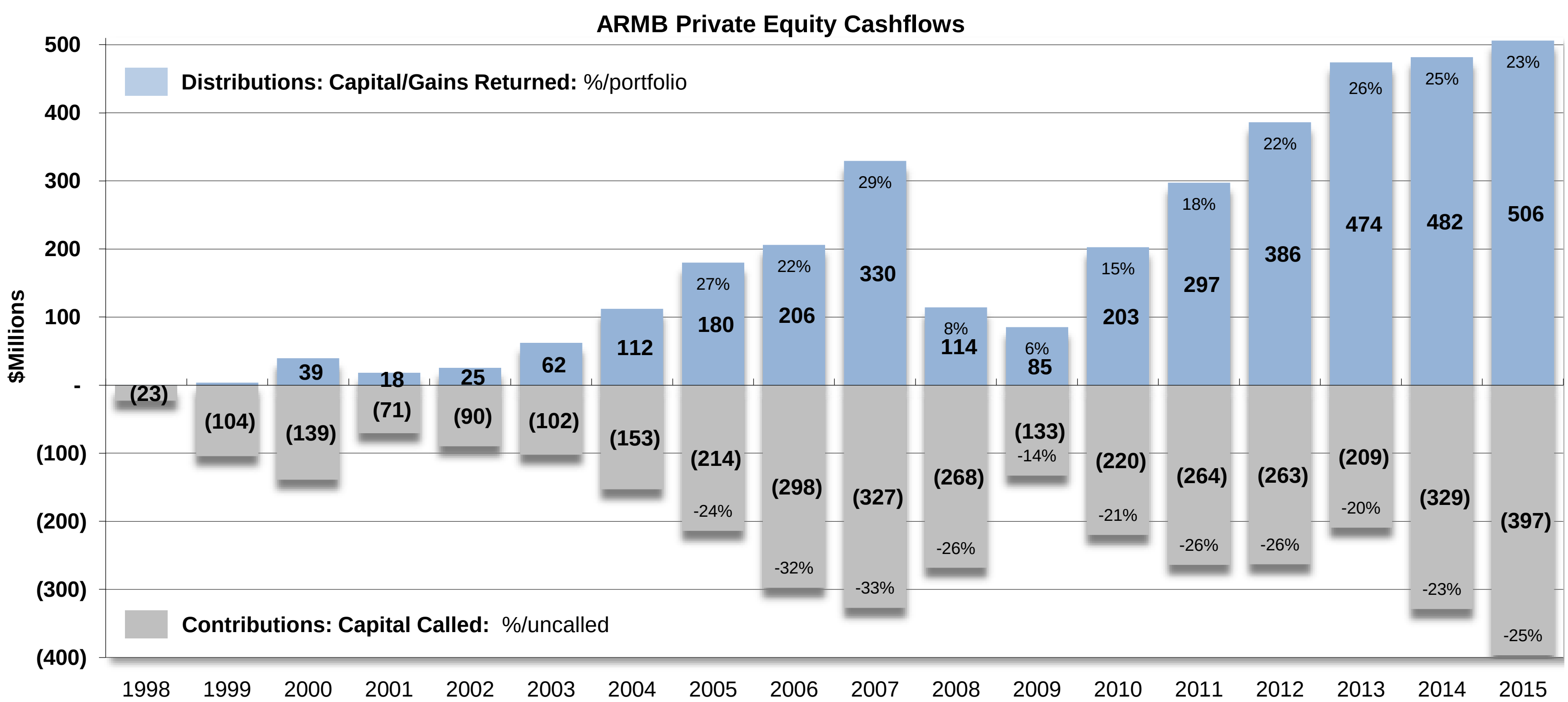
ARMB Portfolio Performance

- The ARMB directly invests in private equity and uses gatekeepers, Abbott Capital Management (1998) and Pathway Capital Management (2001). The asset allocation has increased from 3% to 9%.
- Private equity has been volatile since the ARMB first invested in 1998. Technology and venture capital excesses gave way to a buyout dominated market. The market peak in 2007 was characterized by strong returns, but also by high prices and leverage. Private equity didn't fall as far as the public market through the recent downturn and has now returned to a period of high returns, pricing, and leverage.
- The ARMB and its advisors have built a diversified portfolio of quality partnerships. Manager selection has been strong. Callan recently reported on thirteen vintage years through 2010 – two were top quartile and 11 were second quartile. Overall the program is in the middle of the second quartile.
- Portfolio performance has been strong. The internal rate of return through 2015 is 11.2% versus a public market equivalent of 6.2% for the S&P 500 and 6.6% for the Russell 3000.
- Since inception, the ARMB's private equity program has generated $1.0 billion in additional fund value compared to investing in the public equity markets.



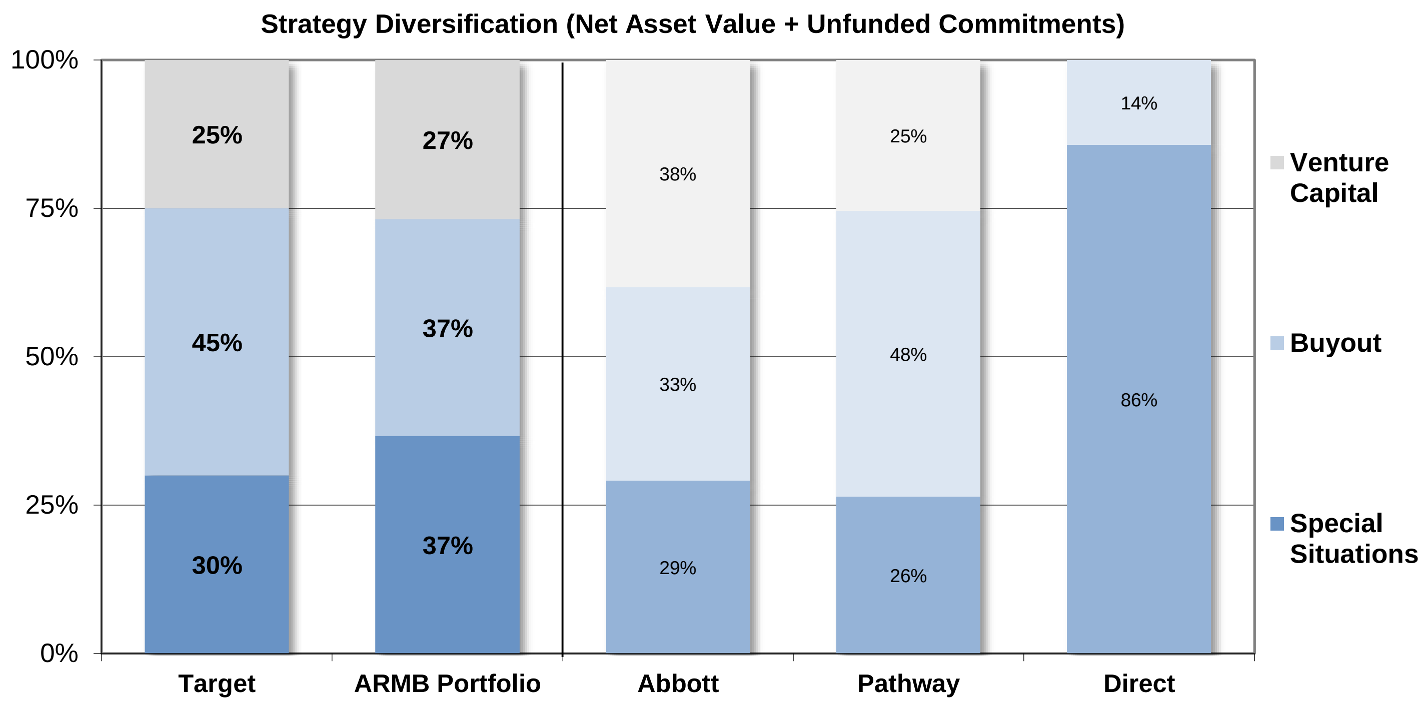
Portfolio Cash Flows

- Distributions increased 5% to $506 million.
- Contributions increased 21% to $397 million.
- Net cash flows were $109 million, 6% of beginning assets.



Diversification by Strategy

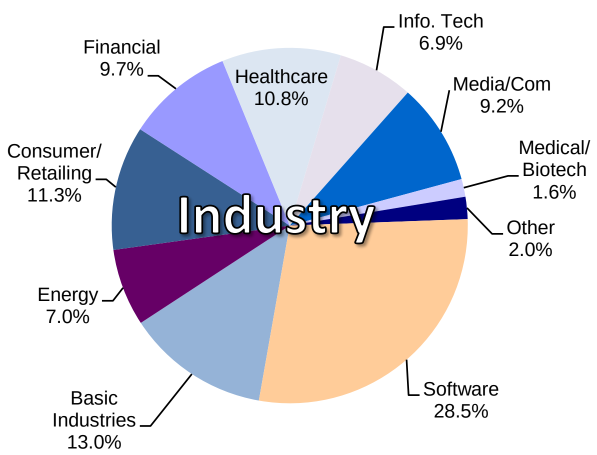
- The portfolio is well diversified by private equity strategy across buyout, special situations, and venture capital partnerships.
- Strategy exposure is within policy bands.
- The direct partnership portfolio is weighted towards well diversified special situations investments.

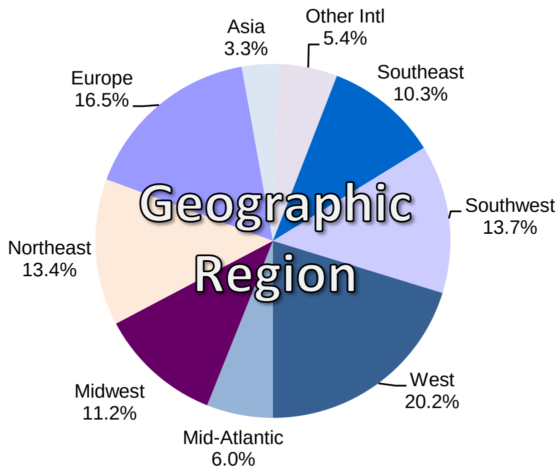


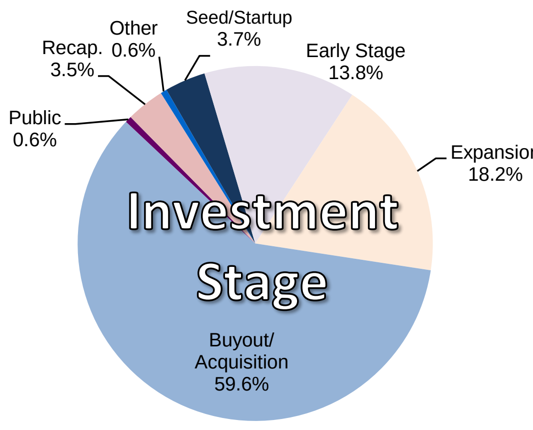
Diversification by Portfolio Company

The portfolio is well diversified and composed of over 2,000 underlying companies:

- Industry – The portfolio is well diversified by industry. The inherently diversified software sector makes up 28.5% of the portfolio.
- Geographic Region – The portfolio is well diversified geographically. International is 25.2% of the portfolio.
- Investment Stage – By investment stage, buyout/acquisition is the highest at 59.6% since the portfolio is buyout focused.







2015 Commitments

- The commitment target for 2015 was $499 million.
- $484.4 million was committed during the year.
- $175.7 million by Abbott, $193.7 million by Pathway, and $115.0 million directly.
- Commitments were well diversified by investment strategy.

Commitments for 2015 ($millions)

Manager	Target	Actual	Number of Investments	Investment Strategy					
				Venture	%	Buyout	%	Special Situations	%
Abbott	$187.0	$175.7	11	$47.8	27%	$104.5	59%	$23.5	13%
Pathway	$187.0	$193.7	20	$53.1	27%	$54.0	28%	$86.6	45%
Direct	$125.0	$115.0	2	$0.0	0%	$0.0	0%	$115.0	100%
Total	**$499.0**	**$484.4**	**33**	**$100.9**	**21%**	**$158.5**	**33%**	**$225.1**	**46%**

2016 Outlook

- ***Less certain exit environment.*** The exit environment for private equity is less certain for 2016 than in prior years. Market volatility in the first quarter of 2016 effectively closed the IPO and debt markets. If volatility decreases, mergers and acquisitions should continue due to high levels of corporate cash and modest internal growth prospects. Similarly, the public equity and credit markets should also supply exit opportunities if volatility decreases.

- ***Stable fundraising.*** Fundraising has been relatively stable for the past several years and is expected to continue at roughly the same pace since many firms have been actively returning and investing capital over the past two years. Getting access to the highest quality partnerships will continue to be challenging and fund closing times have decreased markedly for sought-after firms.

- ***More moderate investment pacing and pricing.*** After peaking in 2015, deal pricing and leverage decreased in the fourth quarter of 2015. Current market volatility may lead to a further decrease in deal pricing and better buying opportunities.

2016 Tactical Plan

- Private equity is expected to continue to deliver meaningful premiums over public market equities. Staff recommends increasing the ARMB's long term allocation to private equity from 10% to 12%.

- Staff is recommending a 2016 commitment target of $530 million. $200 million for Abbott and Pathway and $130 million in direct partnership investments with a measured increase in commitment pacing over the planning horizon designed to reach a 12% asset allocation over the next ten years.

Private Equity Funding Schedule	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beginning Fund Assets($MM)	22,624,986	22,968,043	23,726,484	24,406,429	25,058,860	25,674,311	26,241,779	26,758,261	27,222,694	27,624,844	27,972,660
Fund Net Growth Rate	1.5%	3.3%	2.9%	2.7%	2.5%	2.2%	2.0%	1.7%	1.5%	1.3%	1.1%
Additions from Net Fund Growth	343,057	758,441	679,945	652,431	615,451	567,468	516,482	464,433	402,149	347,817	302,768
Ending Fund Assets	22,968,043	23,726,484	24,406,429	25,058,860	25,674,311	26,241,779	26,758,261	27,222,694	27,624,844	27,972,660	28,275,428
Asset Value by Manager ($MM)											
Abbott	760,881	783,079	825,326	870,757	918,445	963,095	1,026,076	1,078,922	1,118,978	1,145,836	1,163,115
Pathway	817,107	826,048	855,458	895,494	941,002	981,803	1,040,055	1,090,303	1,126,299	1,152,674	1,167,359
Direct Investments	235,829	308,430	396,799	492,409	600,310	716,750	801,450	881,850	960,850	1,025,600	1,073,800
Total Projected Asset Value	1,813,817	1,917,558	2,077,583	2,258,660	2,459,757	2,661,648	2,867,581	3,051,075	3,206,127	3,324,110	3,404,274
Private Equity % of Fund	7.9%	8.1%	8.5%	9.0%	9.6%	10.1%	10.7%	11.2%	11.6%	11.9%	12.0%
Annual Commitments ($MM)											
Abbott	175,742	200,000	205,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Pathway	193,688	200,000	205,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000	210,000
Direct Investments	115,000	130,000	150,000	170,000	190,000	210,000	210,000	210,000	210,000	210,000	210,000
Total Commitments by Year	484,431	530,000	560,000	590,000	610,000	630,000	630,000	630,000	630,000	630,000	630,000

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Annual Tactical Plan for Private Equity	ACTION:	**X**
	Resolution 2016-03		
DATE:	April 21, 2016	INFORMATION:	

BACKGROUND:

The Alaska Retirement Management Board's (ARMB) "Private Equity Partnerships Portfolio Policies and Procedures" calls for the preparation and adoption of an "Annual Tactical Plan" (Plan). The Plan reviews the current status of the portfolio, historical and prospective market conditions, and the annual investment strategy designed to further the ARMB's goals and objectives for the private equity program.

STATUS:

The Plan consists of an overview and summary prepared by staff with integrated tactical plans prepared by the ARMB's private equity investment managers. Staff's overview and summary of the ARMB's consolidated private equity portfolio addresses the following:

I. 2015 Investment Activity
II. Funding Position
III. Diversification
IV. Market Conditions
V. 2016 Tactical Plan

RECOMMENDATION:

That the Alaska Retirement Management Board adopt Resolution 2016-03 approving the 2016 Annual Tactical Plan.

Attachment: ARMB 2016 Annual Tactical Plan for Private Equity

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Private Equity Annual Tactical Plan
Resolution 2016-03

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS, the Board has authorized investment in private equity assets for the State of Alaska Retirement and Benefits Plans; and

WHEREAS, the Board will establish, and on an annual basis review, an investment plan for private equity;

NOW THEREFORE, BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopts the 2016 Annual Tactical Plan for Private Equity which is attached hereto and made a part hereof.

DATED at Anchorage, Alaska this ______ day of April, 2016.

____
Chair

ATTEST:

____
Secretary

ALASKA RETIREMENT MANAGEMENT BOARD

2016 ANNUAL TACTICAL PLAN FOR PRIVATE EQUITY

The Alaska Retirement Management Board's (ARMB) "Private Equity Partnerships Portfolio Policies and Procedures" calls for the preparation and adoption of an "Annual Tactical Plan" (Plan). The Plan reviews the current status of the portfolio, historical and prospective market conditions, and the annual investment strategy designed to further the ARMB's goals and objectives for the private equity program.

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V. 2016 Tactical Plan

OVERVIEW AND SUMMARY

Quality private equity portfolios have historically provided high long-term returns with lower correlation to bonds and public equities. The Alaska retirement systems started investing in private equity in 1998 to enhance returns and further diversify the portfolio. The ARMB makes direct partnership investments and employs investment managers, or gatekeepers, who have discretion to make investments in private equity partnerships on the systems' behalf.

The initial gatekeeper, Abbott Capital Management, was hired in 1998 with an allocation of 3.0% of the Fund. In 2001, the allocation to private equity was increased to 6.0% and an additional gatekeeper, Pathway Capital Management, was hired. The following year, the allocation to private equity was increased to 7.0%. In 2007, the ARMB delegated authority to the CIO to make direct investments in private equity partnerships. The asset allocation for private equity increased to 8.0% in 2011 and 9% in 2013 and the current long term target is 10%. For the 2016 tactical plan, staff is recommending that the ARMB adopt a long term allocation of 12%.

The ARMB and its advisors have discretion to carefully select and invest in high quality partnerships while preserving diversification across strategy, industry, geography, and investment stage. Through 2015, the Alaska retirement systems have committed $4.8 billion to private equity partnerships. This capital is typically drawn down over 5-7 year periods and 75% has been drawn through 2015. The invested value at the end of calendar year 2015 was $1.8 billion, or 7.9% of the Fund's asset allocation.

The private equity landscape has been dynamic since Alaska's initial investment in 1998. The collapse of the technology-related market of the late 1990's gave way to a period of slow rebuilding in the early 2000's. By 2005, private equity was again realizing high returns driven largely by buyout-oriented investments. The market peak in 2007 was characterized by strong returns, but also by high prices and leverage. In 2008, the severe dislocation in the capital markets slowed private equity activity and lowered returns. The market rebound in 2009 and 2010 benefited private equity portfolios, but has also reduced the buying opportunity that usually accompanies a recession. The last several years through 2015 have marked the return of high distributions and gains and also high prices and leverage.

Throughout this dynamic period, the ARMB has assembled a strong and diversified portfolio of high quality partnerships using a disciplined investment approach. The portfolio has performed well when compared with the Cambridge private equity universe. For the thirteen vintage years from 1998 through 2010, the ARMB portfolio was in the top quartile for two years and the second quartile for eleven years. Overall the program is in the middle of the second quartile.

The internal rate of return (IRR) for the portfolio is 11.2% from inception through 2015. The ARMB's private equity return compares favorably with public market equity investments. A public market equivalent return analysis treats the ARMB's private equity cash flows as if they had been used to buy or sell shares of a public market index. The 11.2% IRR for the ARMB private equity portfolio compares well with public market equivalent returns of 6.2% for the S&P 500 and 6.6% for the Russell 3000. The ARMB's long term benchmark for private equity is the Russell 3000 public market index plus 350 basis points and the actual outperformance has been 460 basis points. The time-weighted return for the ARMB's private equity portfolio for calendar year 2015 was 9.5% versus zero for the public market. Since inception, the ARMB's private equity program has generated $1.0 billion in additional fund value compared to investing in the public equity markets.

Private equity is expected to continue to deliver meaningful premiums over public market equities. Staff is recommending increasing the ARMB's long term allocation to private equity from 10% to 12%. Consistent with this increase, staff is recommending an allocation of $530 million in new commitments to be placed in quality, well diversified partnerships by Abbott, Pathway, and the ARMB. This commitment pace should allow the ARMB private equity portfolio to achieve the long term allocation of 12% over the ten year planning horizon.

I. 2015 INVESTMENT ACTIVITY

A. COMMITMENTS

The commitment target for 2015 was $499.0 million and the ARMB closed on a combined total of $484.4 million in new primary and secondary commitments.

Commitments for 2015 ($millions)

Manager	Target	Actual	Number of Investments	Investment Strategy					
				Venture	%	Buyout	%	Special Situations	%
Abbott	$187.0	$175.7	11	$47.8	27%	$104.5	59%	$23.5	13%
Pathway	$187.0	$193.7	20	$53.1	27%	$54.0	28%	$86.6	45%
Direct	$125.0	$115.0	2	$0.0	0%	$0.0	0%	$115.0	100%
Total	**$499.0**	**$484.4**	**33**	**$100.9**	**21%**	**$158.5**	**33%**	**$225.1**	**46%**

The ARMB made 33 investments across 29 partnership groups. Abbott and Pathway both invested with Insight Venture Partners, New Enterprise Associates, TA and EnCap Energy Capital.

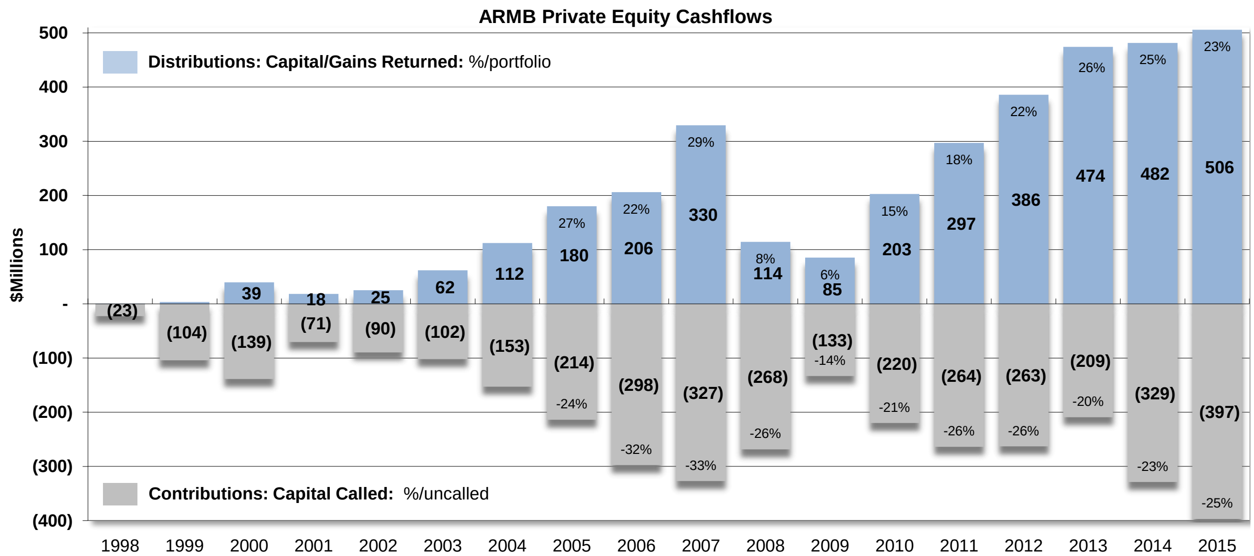
The following table summarizes all the commitments made during 2015.

Strategy	Partnership Fund	Description	Amount	% Total	Date	Advisor
Venture Capital	Holtzbrinck Ventures VI	Seed- and early-stage investments in consumer-Internet companies located primarily in German-speaking countries in Europe.	$8.1	1.7%	1/16/15	Pathway
	Insight Venture Partners IX	Pursues late-stage venture, growth equity and buyout investments, in the software industry in business based in the U.S. and Europe.	$12.5	2.6%	2/19/15	Abbott
	IVP XV	Late- and growth-stage investments in well-established and rapidly growing IT companies primarily in the U.S.	$20.0	4.1%	4/21/15	Pathway
	New Enterprise Associates 15	Pursues venture growth equity investments in information technology and healthcare focused companies, located primarily in the U.S.	$20.0	4.1%	3/17/15	Pathway
	New Enterprise Associates 15	Pursues venture growth equity investments in information technology and healthcare focused companies, located primarily in the U.S.	$23.5	4.9%	3/17/15	Abbott
	Project Pavilion	Secondary interests in a portfolio of other partnerships, focused on venture capital investments in U.S.-based, early-stage companies.	$5.0	1.0%	1/1/15	Pathway
	TA XII	Generally seeks significant minority/majority stakes across IT, healthcare, financial services, business services and consumer sectors.	$11.8	2.4%	7/2/15	Abbott
	Venture Capital Subtotals		***$100.9***	***20.8%***		
Buyouts	AEA Investors Fund VI	Focuses on buyout deals in four main verticals: value-added industrials, specialty chemicals, retail/consumer and services.	$15.3	3.1%	10/9/15	Abbott
	Baring Asia IV - Secondary	Secondary interest in Baring Asia IV, which focuses primarily on growth investment in Asia across a variety of industry sectors.	$4.1	0.9%	1/1/15	Pathway
	Baring Asia PE VI	Minority and control investments across the Pan-Asia middle market in a variety of industries.	$4.3	0.9%	2/24/15	Pathway
	Berkshire Fund IX	Focuses on mid-market companies in retail, consumer, business services, industrial manufacturing, communications and transportation.	$17.5	3.6%	12/18/15	Abbott
	Flexpoint Fund III	Pursues buyout investments in lower middle-market healthcare and financial services companies based in the U.S.	$7.0	1.4%	7/31/15	Abbott
	Flexpoint Special Assets Fund	Fund acquires non-operating financial assets.	$2.4	0.5%	7/31/15	Abbott
	Genstar VII	Control investments in profitable, middle-market companies in financial services, healthcare, software and industrial technology.	$11.5	2.4%	6/26/15	Pathway
	Gilde Buy-Out Fund V	Fund makes mid-market buyout investments in the Benelux/DACH regions. Firm operates from offices in Utrecht and Zurich.	$22.5	4.6%	11/20/15	Abbott
	Harvest Partners VII	Mid-market buyout deals in North America. Pursues high-quality assets with strong management teams to benefit from organic/inorganic growth	$21.0	4.3%	12/21/15	Abbott
	JZI Fund III	Makes control investments in lower-middle market in Southern Europe, Scandinavia, DACH and the U.K. in a variety of outsourced services.	$7.1	1.5%	12/30/15	Abbott
	Nautic VIII	Buyout, growth and consolidation investments in lower- and middle-market companies across a variety of services and industrial sectors.	$6.2	1.3%	12/18/15	Pathway
	Project Rook	Secondary interests focused on leveraged acquisitions, growth capital investments and restructuring.	$3.3	0.7%	1/1/15	Pathway
	Ridgemont II	Buyout and growth equity investments in lower-middle-market companies in the U.S., ranging is size between $25 million and $100 million.	$19.1	3.9%	6/25/15	Pathway
	Sterling Group Partners IV	Seeks buyouts of underperforming and/or undermanaged industrial companies in the U.S.	$11.8	2.4%	6/30/15	Abbott
	Thoma Bravo Discover Fund	Buy-and-build investments in software companies that can grow rapidly either organically, through acquisitions or operational improvements.	$5.4	1.1%	11/24/15	Pathway
	Buyout Subtotals		***$158.5***	***32.7%***		
Special Situations	Advantech I	Investment in Chinese privately-owned and state-owned enterprises in the technology and healthcare sectors.	$5.2	1.1%	11/25/15	Pathway
	Clearlake IV	Control-oriented value investments in small/medium size companies undergoing complex financial, operational or structural change.	$5.9	1.2%	6/5/15	Pathway
	EnCap Energy Capital Fund X	Focus on the U.S. onshore, E&P sector, backing management teams to form new companies with lease-and-drill or acquire-and-exploit strategies.	$20.0	4.1%	4/7/15	Pathway
	EnCap Energy Capital Fund X	Focus on the U.S. onshore, E&P sector, backing management teams to form new companies with lease-and-drill or acquire-and-exploit strategies.	$23.5	4.9%	3/5/15	Abbott
	Fortissimo IV	Equity-related investment in global technology and industrial companies that utilize Israel-related technologies.	$12.3	2.5%	3/31/15	Pathway
	Insight Venture Partners IX	Pursues late-stage venture, growth equity and buyout investments, in the software industry in business based in the U.S. and Europe.	$8.0	1.7%	2/19/15	Pathway
	Lexington VIII	Invests by acquiring a diversified portfolio of interests in established global buyout, mezzanine and venture capital funds secondary transactions.	$50.0	10.3%	3/1/15	Direct
	OCM Xb	Primarily invests in the debt and other securities of distressed companies located in the U.S. and Europe.	$10.0	2.1%	5/12/15	Pathway
	Redview I	Investment in Chinese privately-owned and state-owned enterprises in the advanced manufacturing, alternative energy and consumer sectors.	$5.2	1.1%	11/25/15	Pathway
	Summit GE IX	Buyouts/growth equity in high-growth companies that have proven business models and based primarily in the U.S.	$10.0	2.1%	8/26/15	Pathway
	TA XII	Generally seeks significant minority/majority stakes across IT, healthcare, financial services, business services and consumer sectors.	$10.0	2.1%	6/24/15	Pathway
	Warburg XII	Growth-oriented multi-stage global investor with significant exposure to emerging markets	$65.0	13.4%	11/15/15	Direct
	Special Situations Subtotals		***$225.1***	***46.5%***		
Abbott Subtotal			**$175.7**	**36.3%**		
Pathway Subtotal			**$193.7**	**40.0%**		
Direct Subtotal			**$115.0**	**23.7%**		
TOTAL ($MM)			**$484.4**	**100.0%**		

B. INVESTMENT ACTIVITY

The ARMB's capital commitments are called by private equity partnerships as they make investments in underlying portfolio companies. Capital calls made during 2015 by the ARMB's private equity groups totaled $396.8 million, a 21% increase from the level of 2014 investments. Capital calls were 25% of uncalled capital, close to the long term average. Capital calls by strategy were 45% buyout, 33% special situations, and 22% venture capital.

The ARMB received $506.0 million in distributions from private equity partnerships in 2015, a 5% increase from 2014 and the highest level of distributions since the program's inception for the fourth year in a row. Distributions have increased steadily since 2009 as the exit environment has improved. Distributions were 23% of the portfolio for 2015, modestly below the pace of 2013 and 2014 and well below the 2007 peak of 29%. The distributions were split 42%, 48% and 10% between the Abbott, Pathway and Direct portfolios respectively.



C. STOCK DISTRIBUTIONS

During 2015, Abbott and Pathway sold $36.8 million in stock distributed in-kind to the ARMB. The ARMB experienced a 5.8% loss on the $17.6 million sold by Abbott and a 0.7% gain on the $19.2 million sold by Pathway. Losses of 5% or more are not uncommon due to the potential for significant selling pressure when a general partner distributes large stock holdings to limited partners. The ARMB has processes in place to avoid some of the selling pressure, but the sales process is still volatile. Staff reviewed the 2015 sales and is satisfied with the process that was used to liquidate the in-kind distributions. Stock in Lending Club (NYSE: LC) led to most of Abbott's losses. The stock was sold at a 22% loss from the distribution price and continued to trend down to a 37% loss by the end of December.

II. FUNDING POSITION

A. FUNDING POSITION AS OF DECEMBER 31, 2015

The net asset value of the ARMB's private equity portfolio was $1.8 billion as of 12/31/15, an increase of $56.3 million from 2014. The private equity portfolio represented 7.9% of total assets, below the target of 9%.

Total Fund Market Value 12/31/15 ($MM)	$22,968.0
Target Percent for Private Equity	9.0%
Target Private Equity Allocation	**$2,067.1**
Abbott Net Asset Value	$760.9
Pathway Net Asset Value	817.1
Direct Net Asset Value	235.8
Total Private Equity Portfolio Value	**$1,813.8**
Fund Percent 12/31/15	**7.9%**

Private equity is an illiquid, long-term asset class and the economic environment can significantly affect asset values and cash flows from year-to-year. As a result, private equity has a wide 5% band above and below the ARMB's allocation.

B. PROJECTED FUNDING POSITION 2020 – BASED ON FUNDING MODEL IN APPENDIX I

Projected Fund Market Value Year End 2020 ($MM):	$26,241.8
Projected Private Equity Asset Value:	$2,661.6
Percent of Total Fund:	10.1%

The current recommended long term allocation to private equity is 12% and with the suggested commitment pacing, the ARMB is expected to reach this target within 10 years.

C. FUNDING BY STRATEGY

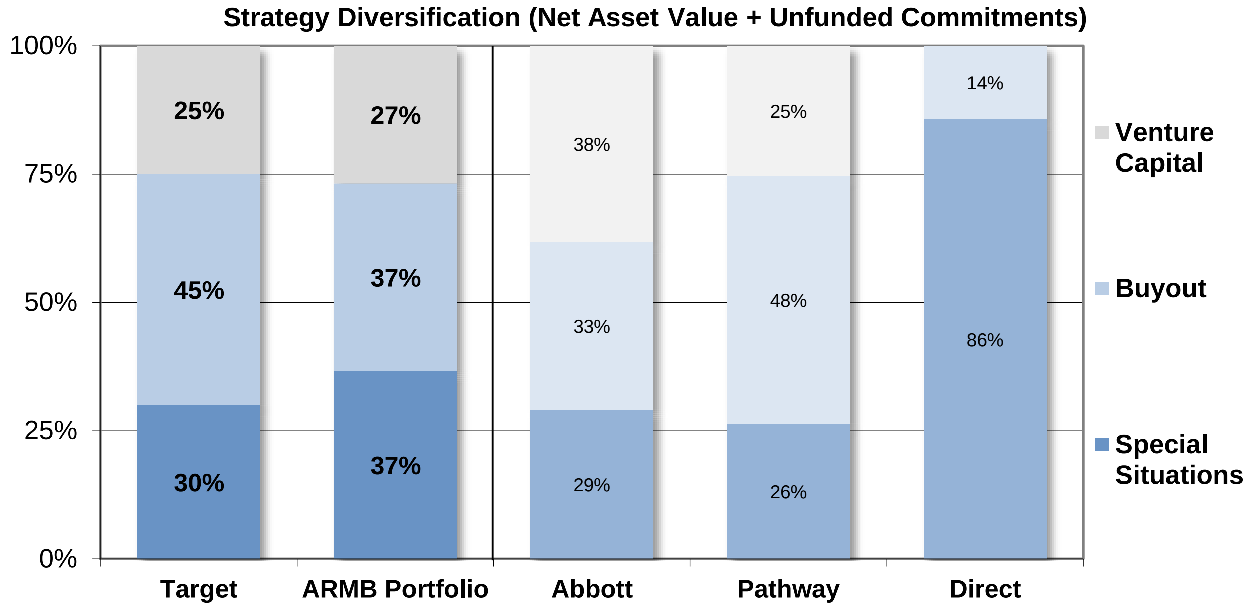
The private equity portfolio has long-term strategy diversification targets with a broad range between minimum and maximum exposure. The portfolio is within acceptable strategy ranges for 2015.

Strategy	Target	Min	Max	Commitments	Capital Called	Unfunded + Capital Called
Venture Capital	25%	15%	40%	25.2%	27.3%	24.4%
Buyouts	45%	30%	60%	37.6%	39.3%	38.1%
Special Situations/Other	30%	20%	40%	37.1%	33.4%	37.5%
Total	**100%**			**100.0%**	**100.0%**	**100.0%**

III. DIVERSIFICATION

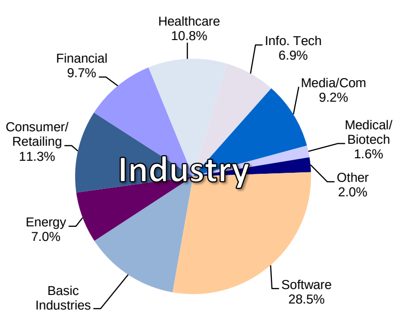
A. INVESTMENT STRATEGY BY PARTNERSHIP AS OF 12/31/2015

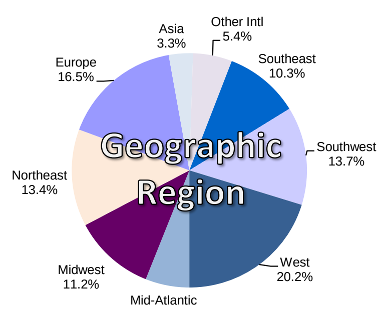
As of 12/31/15, the net asset value of the ARMB's private equity portfolio was $1.8 billion, with Abbott representing 42%, Pathway 45%, and Direct investments 13%. The portfolio is well diversified by investment strategy. Both the Abbott and Pathway portfolios are well diversified and the direct partnership portfolio has significant investments special situations secondary and multi-strategy funds that are diversified. Staff expects that long term diversification will be maintained since managers are focused on making new commitments to a diverse set of high quality funds.

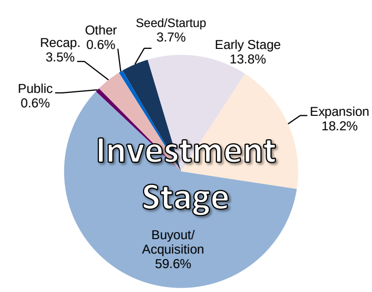


B. INDUSTRY, GEOGRAPHIC REGION, AND INVESTMENT STAGE AS OF 9/30/2015

The portfolio is well diversified by industry. The largest allocation is 28.5% to software, which is inherently well diversified by underlying sector exposure. By geography, the portfolio is well diversified within the United States and has strong international exposure at 25.2% of the portfolio. By investment stage, buyout/acquisition is the highest at 59.6% since the portfolio is buyout focused.





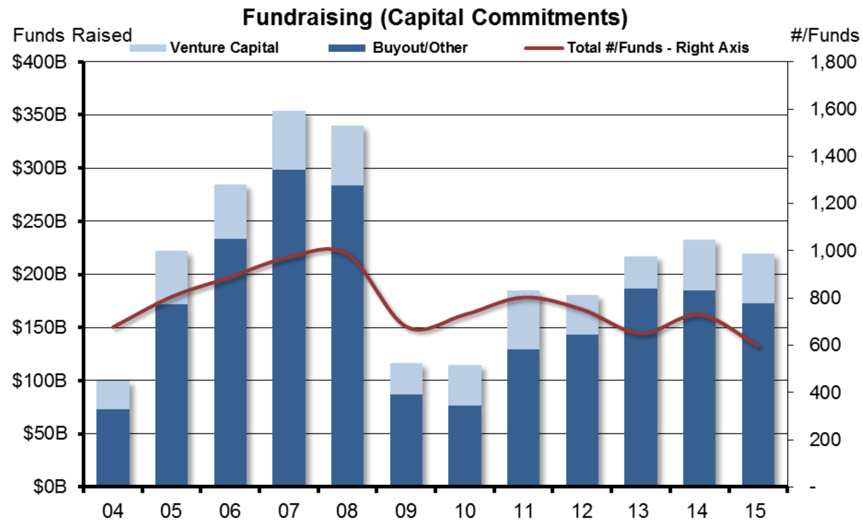


IV. MARKET CONDITIONS

A. 2015 SUMMARY

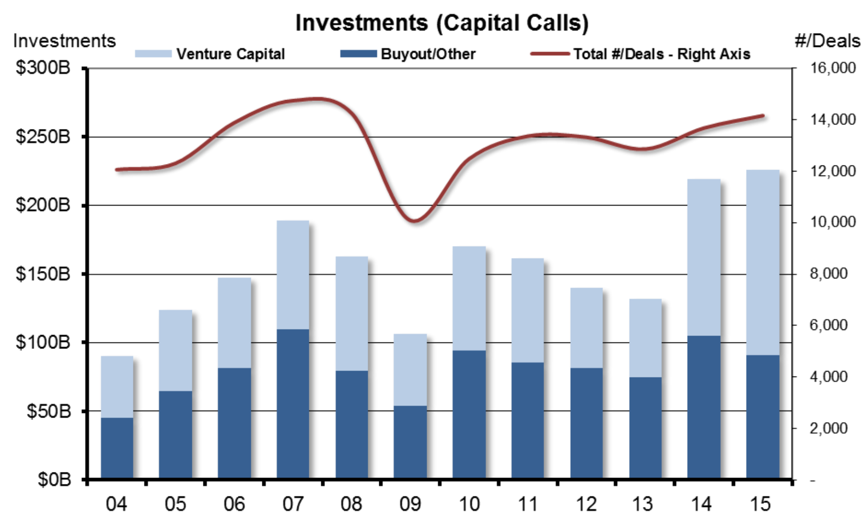
FUNDRAISING

- Fundraising has stabilized, with a modest decrease in 2015.
- Terms are balanced, but sought-after managers have increasing market power.



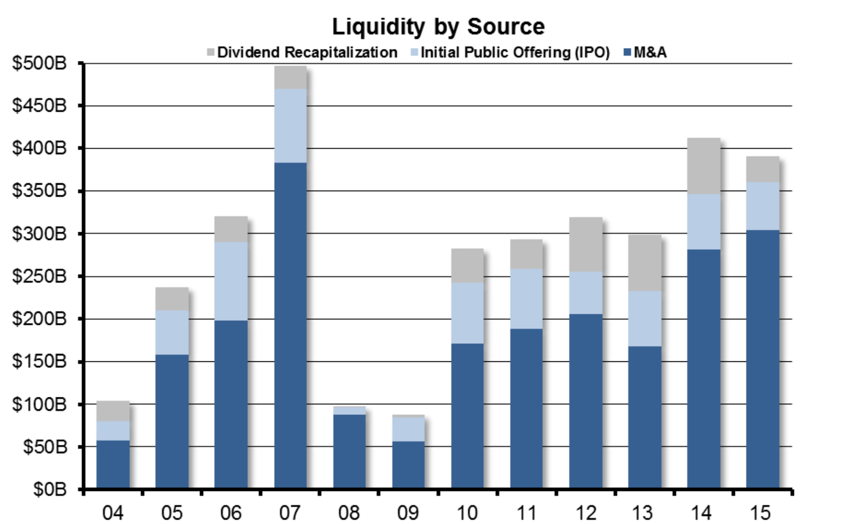
INVESTMENT ACTIVITY

- For most of the year, investment activity continued at a high level for both buyout and venture funds as credit markets were accommodative and market participants were willing to transact at high prices.
- Investment activity was roughly equal to fundraising levels – dry powder remained roughly the same overall.
- Deal pricing and leverage historical highs peaked in 2015, but ticked down at year-end.



EXIT OPPORTUNITIES

- Private equity exits have been strong and consistent for six years, but decreased modestly in 2015.
- Merger and acquisition activity increased to $305 billion.
- Public market exits decreased to $53 billion.
- Debt recapitalizations decreased from record levels to $30 billion.



Source: Thomson Reuters & S&P. Global developed markets, except dividend recapitalization data which is U.S. only.

B. FORWARD OUTLOOK FOR 2016

- ***Less certain exit environment.*** The exit environment for private equity is less certain for 2016 than in prior years. Market volatility in the first quarter of 2016 effectively closed the IPO and debt markets. If volatility decreases, mergers and acquisitions should continue due to high levels of corporate cash and modest internal growth prospects. Similarly, the public equity and credit markets should also supply exit opportunities if volatility decreases.
- ***Stable fundraising.*** Fundraising has been relatively stable for the past several years and is expected to continue at roughly the same pace since many firms have been actively returning capital and the investment pace has picked up over the past two years. Getting access to the highest quality partnerships will continue to be challenging and closing times have decreased markedly for sought-after firms.
- ***More moderate investment pacing and pricing.*** After peaking in 2015, deal pricing and leverage decreased in the fourth quarter of 2015. Current market volatility may lead to a further decrease in deal pricing and better buying opportunities.

V. 2016 TACTICAL PLAN

Staff recommends a commitment target of $530 million for 2016 with an increase in commitment pacing over the next ten years as detailed in Appendix I.

A. TARGET COMMITMENTS FOR 2016

Manager	Target Commitments	Number	Size per Fund	Strategies
Abbott	$200 million	8-14	$10-$30M	Venture capital, buyout, special situations, other
Pathway	$200 million	8-14	$10-$30M	
Direct Investments	$130 million	2-5	$20-$100M	
Total	**$530 million**	**18-33**	**$10-$100M**	

Abbott and Pathway have the ability to commit up to 50% beyond their target allocation with CIO approval to access additional opportunities. The chief investment officer also has the delegated authority to commit up to 1% of total defined benefit assets in addition to the targeted amount for direct partnership investments.

B. TARGET STRATEGIES FOR 2016

The investment opportunities are expected to be balanced by strategy and by the ARMB's other diversification guidelines. The absolute quality of the underlying manager continues to be more important than strict adherence to diversification characteristics. The manager specific tactical plans for Abbott and Pathway follow in Appendix II and III.

APPENDIX I – PRIVATE EQUITY FUNDING PROJECTIONS

Private Equity Funding Schedule	**2015**	2016	2017	2018	2019	**2020**	2021	2022	2023	2024	**2025**
Beginning Fund Assets($MM)	**22,624,986**	22,968,043	23,726,484	24,406,429	25,058,860	**25,674,311**	26,241,779	26,758,261	27,222,694	27,624,844	**27,972,660**
Fund Net Growth Rate	**1.5%**	3.3%	2.9%	2.7%	2.5%	**2.2%**	2.0%	1.7%	1.5%	1.3%	**1.1%**
Additions from Net Fund Growth	**343,057**	758,441	679,945	652,431	615,451	**567,468**	516,482	464,433	402,149	347,817	**302,768**
Ending Fund Assets	**22,968,043**	23,726,484	24,406,429	25,058,860	25,674,311	**26,241,779**	26,758,261	27,222,694	27,624,844	27,972,660	**28,275,428**
Asset Value by Manager ($MM)											
Abbott	**760,881**	783,079	825,326	870,757	918,445	**963,095**	1,026,076	1,078,922	1,118,978	1,145,836	**1,163,115**
Pathway	**817,107**	826,048	855,458	895,494	941,002	**981,803**	1,040,055	1,090,303	1,126,299	1,152,674	**1,167,359**
Direct Investments	**235,829**	308,430	396,799	492,409	600,310	**716,750**	801,450	881,850	960,850	1,025,600	**1,073,800**
Total Projected Asset Value	**1,813,817**	1,917,558	2,077,583	2,258,660	2,459,757	**2,661,648**	2,867,581	3,051,075	3,206,127	3,324,110	**3,404,274**
Private Equity % of Fund	**7.9%**	8.1%	8.5%	9.0%	9.6%	**10.1%**	10.7%	11.2%	11.6%	11.9%	**12.0%**
Annual Commitments ($MM)											
Abbott	**175,742**	200,000	205,000	210,000	210,000	**210,000**	210,000	210,000	210,000	210,000	**210,000**
Pathway	**193,688**	200,000	205,000	210,000	210,000	**210,000**	210,000	210,000	210,000	210,000	**210,000**
Direct Investments	**115,000**	130,000	150,000	170,000	190,000	**210,000**	210,000	210,000	210,000	210,000	**210,000**
Total Commitments by Year	**484,431**	530,000	560,000	590,000	610,000	**630,000**	630,000	630,000	630,000	630,000	**630,000**

NOTES ON FUNDING PROJECTION MODEL

- The Fund's projected net growth rates are based on actuarial projections adjusted for actual 12/31/15 Fund values.
- Investment commitment drawdowns are modeled over a seven-year period with the majority of the drawdowns occurring over the first four years.
- Returns of capital and gains are modeled over a fourteen-year period, with only 5% of the distributions occurring during the first four years of a partnership.
- Realized and unrealized gains are modeled at a level commensurate with past performance and future expectations.
- Commitments are scheduled at a pace to achieve the ARMB's long term private equity allocation and preserve vintage year time diversification.

Abbott Capital Management Annual Tactical Plan

I. 2015 INVESTMENT ACTIVITY

A. 2015 Fund Commitments

On behalf of ARMB, Abbott committed $176.7 million to 12 primary commitments and one secondary opportunity in 2015 versus a target of $187 million.

1. Primary Activity

In 2015, Abbott closed on 12 primary commitments totaling $175.7 million on ARMB's behalf as listed below:

Primary Fund Commitments: 2015			
Fund	**Strategy**	**Commitment**	
Insight Venture Partners IX	Growth Equity	$12.5	million
EnCap Energy Capital Fund X	Special Situations – Industry Focus	23.5	million
New Enterprise Associates 15	VC – Multi-stage	23.5	million
Sterling Group Partners IV	Medium Buyout	11.8	million
TA XII	Growth Equity	11.8	million
Flexpoint Fund III	Small Buyout	7.0	million
Flexpoint Special Assets Fund	Small Buyout	2.4	million
AEA Investors Fund VI	Medium Buyout	15.3	million
Gilde Buy-Out Fund V	Medium Buyout	22.5	million
Berkshire Fund IX	Medium Buyout	17.5	million
Harvest Partners VII	Medium Buyout	21.0	million
JZI Fund III	Small Buyout	7.1	Million
		$175.7	**million**

*Commitments to Gilde Buy-Out Fund V and JZI III were €21M and €6.5M, respectively. Commitments with respect to partnerships denominated in non-U.S. currency reflect the USD commitment amounts at the time of closing. Slight differences may exist due to rounding.

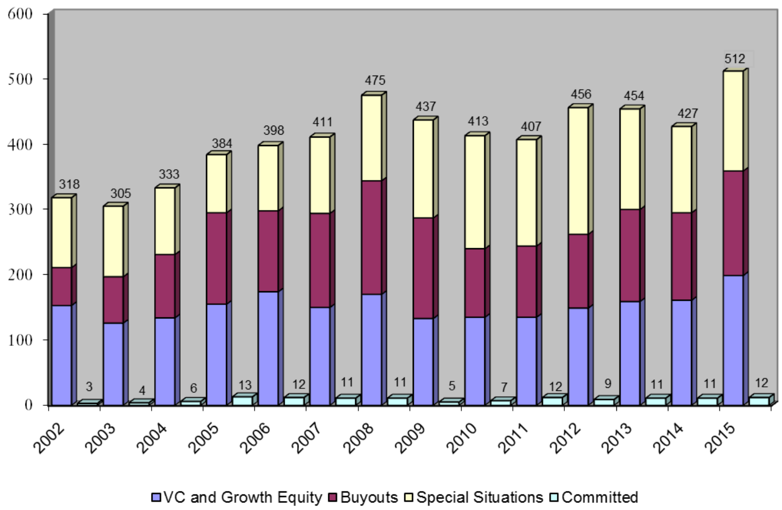
2. Secondary Activity

In 2015, Abbott committed to one secondary opportunity on behalf of ARMB, **Trident V** (Stone Point), a medium buyout fund focused on the financial services industry, for $964,831 maximum cash outlay.[1]

[1] Maximum cash outlay equals the purchase price plus the unfunded commitments at the time of purchase.

B. Deal Flow

Abbott reviewed 512 primary fund opportunities across all categories of private equity in 2015, the highest amount reviewed in the past 15 years. Abbott committed to 12 of these funds on behalf of ARMB.



II. ARMB PORTFOLIO REVIEW

A. Review and Analysis of ARMB's Program Activity

From the inception of ARMB's private equity program in 1998 through December 31, 2015, Abbott has committed $2.23 billion to 185 private equity funds through primary commitments across the three broad categories of diversification (venture capital and growth equity, buyouts and special situations). ARMB's average commitment amount to these partnerships is approximately $12.1 million. Abbott has been notified that six of these partnerships were fully liquidated in 2015: Columbia Capital Equity Partners II, TA IX, U.S. Venture Partners VI, Candover 2005 Fund, GTCR Fund VII, and VS&A Communications Partners III. ARMB has also purchased 20 secondary interests in 18 funds totaling $21.9 million in maximum cash outlay. As of December 31, 2015, ARMB has cumulatively made 205 partnership investments representing $2.26 billion in primary commitments and secondary maximum cash outlay.

Based on information available to Abbott as of the report date, ARMB's portfolio should be able to achieve the year-end 2020 Net Asset Value Target of through continued deployment of capital over the next five tactical plan periods. At December 31, 2015, the active portfolio was valued at $761.1 million, including a pooled partnership net asset value of $758.3 million and $2.8 million of publicly-traded stock held by ARMB as of December 31, 2015.[2] Note that ARMB's partnership holdings were valued at the September 30, 2015 fair value adjusted solely for partnership cash flows through year-end. Actual values as of December 31, 2015 will differ from those reported above. The year-end 2015 Net Asset Value (including distributed stock pending sale or settlement) of $761.1 million is below ARMB's stated 2020 target. As evidenced in prior years, investment/distribution activity combined with valuation changes may cause the portfolio to be somewhat over or under its target allocation depending on the economic cycle. However, provided that the portfolio experiences a consistent level of commitments and distributions, ARMB's private equity funding projections suggest that the Net Asset Value will remain near its targeted level as the portfolio matures.

[2] The pooled portfolio value for the ARMB account included herein is based on the aggregate portfolio fund values as of September 30, 2015, adjusted by all cash flows through December 31, 2015, plus the value of distributed stock not yet sold as of December 31, 2015. Pursuant to the request of ARMB, ARMB receives an expedited statement on the last business day of each month, and therefore, the pooled portfolio value reported by ARMB elsewhere in this report reflects an estimated year-end pooled portfolio value based on portfolio fund values as of September 30, 2015, adjusted solely for cash flows through December 31, 2015 and the value of distributed stock not yet sold as of December 31, 2015.

B. Portfolio Performance

The ARMB Net IRR since inception, net of investment management fees paid by ARMB to Abbott, was 9.5% as of September 30, 2015, a 10 basis point decline from last year.[3] Although private equity is an asset class that should be measured over the long term, ARMB's one-year return on the portfolio, gross of investment management fees paid by ARMB to Abbott, was 11.9% as of September 30, 2015.

ARMB's long-term performance as of September 30, 2015 is also favorable when compared to various public indices in a public market equivalent ("PME") calculation. Through September 30, 2015, the long-term performance of the ARMB program outperformed the S&P 500 and Russell 3000 by 460 and 400 basis points, respectively, according to Abbott's public market equivalent analysis.

As of September 30, 2015	**Performance**	**Outperformance**
ARMB Net IRR (net of Abbott fees)	9.5%	**N/A**
PME Benchmark (S&P 500)	4.9%	**4.6%**
PME Benchmark (Russell 3000)	5.5%	**4.0%**

III. GENERAL MARKET OVERVIEW

A. Venture Capital and Growth Equity

Investment activity within venture capital and growth equity approached the peak level reached in 2000, with $131.0 billion invested globally in 2015 versus the $153.5 billion in 2000. Last year's transactions included some of the best-known venture-backed names, such as Airbnb, Social Finance, and Uber Technologies. Corporate investors, benefitting from strong balance sheets, accounted for more than 10% of all venture capital deals in the U.S. last year, investing $2.5 billion and $1.2 billion in the software and biotechnology sectors, respectively. Global venture capital fundraising remained healthy, with many cycle-tested general partners raising capital for new funds, and investors willing and able to redeploy capital.

Trade sales, long considered an exit channel for more mature private equity-owned businesses, have become more frequent in venture capital. Strategic acquirers such as EMC, Pandora Media, and Blackberry helped to make 2015 the biggest year ever for mergers and acquisitions, including all regions, transaction types, and sizes. Corporations have taken advantage of financial sponsors' hesitancy to tap the volatile and uncertain public equity markets through IPOs. Venture capital public offerings produced $10.9 billion of total transaction value in 2015, including the disappointing Square and Box transactions that priced their IPOs below their peak private values. While strategic activity increased, corporations remained selective in their purchases, exercising caution as the market began to question valuations of many unicorn portfolio companies. Non-traditional investors, such as mutual funds and hedge funds, have contributed to the overall valuation decline because of their need to mark their assets to market more frequently. Dropbox and Snapchat, for example, were marked down by more than 20% last year by mutual funds holding their shares, while Fidelity marked down its investment in Blue Bottle more than 60% after its purchase. A continued drift in valuations may force private firms to raise capital through "down-rounds," or valuations below their earlier billion-dollar-plus levels.

Globally, capital raised for venture capital and growth equity funds fell 6% from 2014 to $45.6 billion in 2015. Notably, 2015's fundraising total is still more than the average annual capital raised between 2001 and 2014 of $40.4 billion per year. At a total of 402 funds seeking capital, there were 15% fewer funds in the market than in 2014. U.S. funds raised $28.3 billion in capital, approximately 10% less than in 2014, and capital raised for Asian funds was also lower, falling by nearly 25% from 2014 to $7.8 billion. In stark contrast to these two regions, European funds raised $7.7 billion in 2015, up 83% from their 2014 total. The number of U.S. and Asian funds seeking capital both fell by 18% from 2014. In contrast, there were 20% more European funds in the market this year than last.

[3] This return is calculated net of Abbott's investment management fees, and was calculated using the fair value of ARMB's portfolio as of September 30, 2015 and monthly partnership cash flows since inception through September 30, 2015.

Although global venture capital and growth equity investments increased 19% year-over-year, the number of transactions remained essentially flat overall. European venture and growth investors were particularly active in 2015, investing 64% more than the region had the prior year, while Asian and U.S. investors also increased their activity, by 38% and 31%, respectively, over 2014's measure. The number of transactions in Asia increased by nearly 30% over 2014, but was roughly the same in the U.S. and Europe. Globally, M&A activity fell 28% to $51.9 billion, dramatically lower than the prior year, which included the multi-billion-dollar sales of WhatsApp, Nest Labs, and Oculus VR. Even after removing those three acquisitions, the combined value of deals in 2014 still outpaced that of 2015.

B. Buyouts and Special Situations

Distribution activity was again the headline from 2015 within the buyout and special situations segment, continuing a trend that has been in place since 2013. Portfolio liquidity was brought about by a strong year for mergers and acquisitions, dominated by strategic purchases by corporate buyers. Buyout IPO activity was particularly weak, falling to roughly 30% of 2014's elevated transaction value. Market volatility continued to make IPOs difficult to execute, as evidenced by private-equity-backed firms like Neiman Marcus Group and Albertsons Cos. postponing their public offerings in 2015. Still, investors were in the fortunate position of having record amounts of capital returned to them, even if they were then required to make the difficult decision as to what to do with it.

Leverage became more difficult to obtain for larger transactions, as banks have seemingly stepped away from financing deals that require more than 6x EBITDA of debt. CLOs had another strong year in 2015 overall, but slowed their purchase activity by over 36% in the second half of 2015 compared the first half, and declined approximately 20% year-over-year. According to managers in Abbott's network, leverage seems to be still available through middle-market and mezzanine loans.

Buyout and special situations firms globally raised $245.6 billion, a 12% decrease from 2014. Approximately $40 billion went to small-and-medium buyout funds globally. Interestingly, $73 billion was raised for funds seeking more than $5 billion in committed capital, 16% more than in 2014. U.S.-based firms raised 8% less capital compared to 2014, accumulating $162.1 billion, while European-domiciled firms raised $62.1 billion in 2015, roughly flat compared to the prior year. Asian fundraising fell over 50% from 2014 levels, raising only $12.1 billion. The annual fundraising level for Asian buyout funds peaked in 2008 at $38.6 billion, and since that time the annual amount raised has only come within 10% of that peak once in 2011.

Despite the influx of capital, global investment activity within buyouts fell nearly 20% from 2014, with European buyouts experiencing a 43% decline in capital invested due to concerns about macroeconomic conditions. Globally, buyout and special situations firms invested $83.8 billion in nearly 4,000 companies. While U.S. buyout and special situations firms invested approximately 16% less than they had in 2014, European investing fell by 43% from its total in 2014. Asian investing increased modestly to a new high. Last year was the second year in a row that Asian buyout investment activity remained at elevated levels from its 2000–13 average annual investment pace of $6.0 billion per year.

C. Secondary Activity

Secondary transaction volume remained elevated in 2015, reaching $40 billion and nearly matching the record $42 billion set in 2014. While the trade of limited partner positions still dominates the type of secondary sales at 78% of all volume, direct equity deals and general partner liquidity solutions have expanded, composing 22% of activity versus 19% in 2014. The secondary market continues to be highly concentrated, with the top 15 buyers accounting for approximately 80% of transaction volume in 2015, up from 75% in 2014. The estimated level of dry powder for secondaries rose to a record high of $65 billion at year-end 2015, up from $56 billion at the midpoint of 2015. Secondary fund managers hope to raise an additional $40 billion of capital in 2016. The price of secondary deals remains competitive given sustained buy-side demand, although prices appear to have moderated slightly in late 2015 due to public market volatility.

Active portfolio management and regulatory pressure remain the two main reasons for the sale of interests, at 66% and 14%, respectively. Public and private pensions were the most active seller type in 2015 at 24% of transaction volume, followed by financial institutions at 18%, which dropped steeply from 41% of transaction volume in 2014. Leverage played an increasingly important role in secondary transactions: 25% of deal volume was leveraged at the special-purpose-vehicle level in 2015, up from 17% in 2014. Average loan-to-value levels were 40%, versus 30% in 2014. Buyout and growth equity funds still represent the bulk (71%) of the interests that trade on the secondary market.

End Notes to Market Conditions section
The information and charts presented in this document were generally sourced from the following materials.

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exitround, October 15th, 2015. "VC-Backed M&A Jumps in Q3 2015, VC Investing Deals Drop."
Forbes Investing, January 3rd, 2016. "Leveraged Loans: Despite Drop, U.S. CLO Issuance Hits 2nd Highest Level Ever in 2015."
Greenhill Cogent: Secondary Market Trends Outlook. January 2016
Moelis & Company: 2015 Capital Markets Annual Review. January 2016.
Pitchbook: Global PE Deal Multiples and Trends Report. 4th Quarter 2015.
Pitchbook: 2015 Annual U.S. PE Breakdown.
The New York Times Dealbook, January 21st, 2016. "As Unicorns Lose Their Horns, Watch Out."
The Triago Quarterly, November 2015.
The Wall Street Journal, November 29th, 2015. "Forget Going Public, U.S. Companies Want to Get Bought."
The Wall Street Journal, December 3, 2015. "2015 Becomes the Biggest M&A Year Ever."
The Wall Street Journal, December 25th, 2015. "Nutanix, Okta, Twilio, and Coupa Ready 2016 IPOs."
The Wall Street Journal, January 24th, 2016. "Recession Warnings May Not Come to Pass."
The Wall Street Journal, January 25th, 2016. "How Bad is Retail? Look at the Bonds."
The Wall Street Journal, February 2nd, 2016. "Tech Pain: Startups are Buying Back a Lot More Employee Stock."
Thomson Reuters/Thomson ONE database (Fundraising, Investments, M&A, IPOs). Data retrieved from Thomson Reuters is continuously updated and is therefore subject to change. All data in Thomson One derived from either Thomson Financial sources or public filings.
upfront Ventures: Venture Capital 2016 – Some Upfront Views. February 2016.
Venture Capital Journal: January 2016, Issue 1.

IV. DIVERSIFICATION – SEE STAFF SUMMARY

A. Venture Capital and Growth Equity

ARMB has accumulated a well-diversified portfolio of 70 active venture and growth equity funds (not including 14 secondary commitments to existing funds). Abbott will continue to identify opportunities to build on ARMB's existing relationships with top-performing groups while selectively pursuing relationships with high-quality groups not currently in the ARMB portfolio.

B. Buyout and Special Situations

ARMB has a well-diversified portfolio of 91 active buyout and special situations partnerships (not including three secondary commitments). Similar to venture managers, Abbott will continue to seek to develop relationships with strong-performing groups and selectively seek high-quality firms that can augment the ARMB portfolio and add incremental diversification. We anticipate a strong year in terms of buyout and special situations commitments given funds currently in the market raising capital as well as Abbott's projected pipeline of opportunities, which includes a number of existing ARMB managers as well as potential new relationships.

C. International

ARMB's Private Equity Partnerships Portfolio Policies and Procedures provide target ranges for the eligible investment strategies. Global/International is currently allocated a range of up to 35%. In 2015, Abbott made two commitments to international partnerships on behalf of ARMB: **Gilde Buy-Out Fund V**, a middle-market buyout fund that invests in the Benelux and DACH regions, and **JZI Fund III**, which also invests in middle-market companies in Western Europe.

V. MONITORING

A. Specific situations being monitored

Abbott has made 205 commitments (primary and secondary) to 185 partnerships on behalf of ARMB, 162 of which were active as of December 31, 2015. Abbott actively monitors these funds on an ongoing basis.

Among the partnership groups in ARMB's portfolio, many have advisory or valuation committees. Abbott serves on approximately half of these committees, which generally meet formally two to four times per year. Abbott also seeks to attend each annual meeting held for partnerships in the ARMB portfolio. Abbott regularly visits general partners in their offices as part of our ongoing due diligence, and general partners frequently visit Abbott to provide us with updates. Outside of formal meetings, Abbott speaks to general partners on a regular basis to deepen our understanding of the portfolio investments as well as the dynamics of the general partner groups. This process enables Abbott to make informed decisions regarding whether groups in the portfolio should be supported in the future. Abbott has periodic conference calls with ARMB staff to review and discuss current issues affecting the portfolio.

VI. EXITING

A. Pending Distributions or Liquidations

As detailed below, ARMB's portfolio experienced an increase in distributions and capital calls in 2015 compared to 2014 activity. Despite this dynamic, ARMB's portfolio was still highly cash generative in 2015 as total distributions outpaced capital calls by a 1.5:1 ratio, compared to a 1.6:1 ratio in 2014. In the near term, liquidity is expected to remain strong given increased merger and acquisition activity as the public markets have flattened. Over time, market dynamics will shift and the pace of capital calls relative to distributions will likely revert back to more normalized levels.

B. Any Other Relevant Considerations Relating to Exiting ARMB's Investments

In 2015, ARMB received cash distributions of $190.5 million compared to $177.4 million received in 2014. During 2015, ARMB also received securities valued at $20.0 million with a cost basis of $2.8 million. Distributed stock liquidated in 2015 (including distributed stock held as of December 31, 2013 pending settlement) was converted into net cash proceeds of $17.6 million during 2015. In aggregate, ARMB ultimately received $208.2 million in net cash proceeds[4] resulting from 2015 transaction activity, representing an approximate $15 million increase over the net proceeds received in 2014.

VII. 2016 GOALS AND STRATEGY

Candidates Abbott is Aware of and/or Planning to Pursue

Abbott will continue to review partnerships that meet the guidelines of ARMB's strategic portfolio structure across all three broad categories of diversification. We anticipate several top-tier venture capital and growth equity, buyout and special situations groups currently in ARMB's portfolio will return to the market to raise fresh capital in 2016. Abbott expects new quality partnership opportunities will also arise, which will selectively be added to ARMB's portfolio mix. Whether a new or existing relationship, we will continue to apply our rigorous due diligence process to each opportunity.

Abbott will continue to focus on larger dollar commitments to top-tier private equity partnerships. It should be noted, however, that access to high-quality funds is frequently a significant barrier for limited partners, particularly those new to the asset class. As such, Abbott recommends that ARMB remain flexible with respect to commitment sizes, which will provide the portfolio the widest possible access to high-quality private equity partnerships. Subject to an acceptable pipeline of opportunities, Abbott will seek to prudently commit capital on ARMB's behalf at an average annual level of $200 million over the next five years. We note, however, that the fundraising market is cyclical and no assurances can be made that the stated commitment goals will be attained in any given year.

Year-to-date, ARMB has committed and closed on a total of $57.7 million to eight funds: **Advent International GPE VIII**; **GGV VI**, **GGV Plus**, and **GGV Discovery I**; **Battery Ventures XI** and **XI Side Fund**; and **Lightspeed Venture Partners XI** and **Select II**. Advent International, an existing relationship, invests in middle- to upper middle-market buyout opportunities predominantly in developed Europe and North America. GGV, a new relationship for Abbott, is a multi-stage venture capital firm focused on technology companies in the U.S. and China. Similarly, Battery Ventures, another longstanding Abbott relationship, is a multi-stage venture and buyout group that invests in technology companies in the U.S., Israel, and Western Europe. Lightspeed makes early- and late-stage investments in enterprise IT and consumer internet companies.

VIII. SUMMARY

ARMB experienced another active year in 2015, with respect to distributions and investments across all segments of their private equity portfolio. As a result, ARMB received total net cash proceeds of $208.2 million, an 8% increase from the prior year, while capital calls increased 19%. The year's strong commitment activity combined with valuation declines helped generate a 4 basis point decrease in ARMB's total estimated year-end 2015 pooled portfolio IRR, to 9.67%. Abbott ultimately closed on 12 primary fund commitments on ARMB's behalf during the year, totaling $175.7 in commitments.

In 2016, Abbott will continue developing ARMB's strategic portfolio with a focus on committing larger dollar amounts to top-tier private equity partnerships, while retaining the flexibility to commit lesser amounts to certain opportunities should the situation warrant. In addition, Abbott will continue to remain active in the secondary market with the goal of boosting returns and increasing vintage year diversification. As always, Abbott will maintain its rigorous selection criteria with the goal of building a high-performing, diversified portfolio across venture capital and private equity.

Important Information

Past performance is not a guide to future results and is not indicative of expected realized returns. Refer to the Performance Glossary for important information relating to the calculation of performance returns included in this presentation and pertinent performance related definitions.

[4] Net of related brokerage commissions, fees and expenses and any gain or loss realized upon the sale of distributed stock.

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Standard indices do not represent benchmarks but are listed to show the general trends in the markets covered by those indices. An investor cannot invest directly in an index. Index performance does not reflect fees and expenses. Annualized time-weighted total returns of the S&P 500 (representing the large-cap segment of U.S. equity markets based on market capitalization) are based on value provided by Standard & Poor's and include the reinvestment of dividends and income. Annualized time-weighted total returns of the Russell 3000 Index (representing a broad-based, market-capitalization-weighted index of 3,000 U.S.-traded stocks) are based on values provided by Russell Investment Group and include the reinvestment of dividends.

PME of an Abbott Fund is an internal rate of return calculated utilizing actual amounts and dates of contributions and distributions from inception through the measurement date and a net remaining investment position, assuming those amounts were used to purchase and sell share of a public market index on the respective dates of contributions or distributions.

PME+ of an Abbott Fund is an internal rate of return utilizing actual amounts and dates of contributions but scaling each distribution, if any, by a constant proportion such that after assuming the purchase and sale of shares of a public market index using the actual contribution and scaled distribution amounts and dates, the net remaining investment in the index equals the actual limited partner net asset value of the Abbott Fund at the measurement date.

PME+ is provided because if a portfolio significantly outperforms the public market index due to a high level of distributions, then the net remaining investment in the index may be in a short position. By scaling distributions by a constant proportion, a PME+ return calculation permits the net remaining investment in the index to equal the net asset value of the portfolio at the measurement date. As such, in this situation, a PME+ return calculation may provide a more suitable comparison than PME

Any PME (or PME+) analysis is based on illiquid and unrealized values which may vary considerably over the life of a portfolio, thus making this type of comparison more relevant with respect to mature portfolio (i.e., where net asset value is a small fraction of total distributions).

For purposes hereof, Abbott has calculated PME as described in "A Private Investment Benchmark", a 1996 white paper by Austin M. Long III and Craig J. Nickels, and PME+ as described in "Private Equity Benchmarking with PME+", an article published in the Venture Capital Journal (August 2003) by Christophe Rouvinez of Capital Dynamics.

All investments are subject to risk, including the loss of the principal amount invested. Private equity related risks include among others: those associated with leverage, illiquidity and restrictions on transferability and resale of the investment and the speculative nature of private equity investments in general. Fund of fund risks include dependence on the performance of underlying managers, Abbott's ability to allocate assets and expenses incurred at the Abbott Client and underlying portfolio fund levels. Exchange rate fluctuations may affect returns. Diversification will not guarantee profitability or protection against loss. There is no assurance that an Abbott Client's objective will be attained. Performance may be volatile and the value of your investment(s) may fluctuate. Please refer to Abbott's Form ADV, Part 2a, available on the SEC's website at www.adviserinfo.sec.gov for additional risk disclosures.

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APPENDIX III PATHWAY TACTICAL PLAN

Pathway Capital Management Annual Tactical Plan

Pathway Portfolio Overview

From the inception of the Pathway/ARMB private equity program in 2002 through December 31, 2015, Pathway committed $1.9 billion to 149 private equity partnerships across 69 managers on behalf of the Alaska Retirement Management Board (ARMB). As of year-end 2015, $1.5 billion, or 80% of total commitments, had been drawn and $1.5 billion in distributions had been received. The portfolio has produced a total value of $2.3 billion, which represents 153% of cumulative contributions, and has generated a since-inception net IRR of 13.3%.[1]

The portfolio continued to generate positive performance in 2015: during the 1-year period ended December 31, 2015, the portfolio posted a gain of $43.2 million and a return of 5.3%. The portfolio's venture capital partnerships performed particularly well, collectively generating an annual gain of $23.4 million and a 1-year IRR of 8.4%. Notably, the portfolio has generated positive returns in 25 of the past 27 quarters, which has resulted in $687.6 million in gains and a 480-basis-point improvement in the portfolio's since-inception net IRR since the first quarter of 2009.

Both contribution and distribution activity remained strong during 2015. ARMB contributed $155.6 million during the year, which is slightly above the $154.3 million contributed during 2014 and also the second-highest annual contribution total since the program's inception. Distribution activity totaled $238.2 million in 2015, the second-highest annual distribution total since the program's inception and just below 2014's record distribution total of $246.6 million. Notably, 2015 marked the fifth-consecutive year that the portfolio has been cash flow positive (distributions exceeding contributions). During this 5-year period, distributions have outpaced contributions by $372.5 million.

2015 Review

Commitments

A summary of 2015 commitment activity by investment strategy compared with the 2015 Tactical Plan allocation targets is provided in table 1. Pathway continued to maintain its rigorous due diligence process and strict partnership selection criteria during 2015, reviewing 523 partnership opportunities before ultimately selecting 20 for inclusion in the ARMB portfolio. Pathway committed $193.7 million on behalf of ARMB in 2015; the portfolio was within the target ranges for the buyouts, venture capital, and restructuring investment strategies but outside the target ranges for the special situations strategy and for the year overall. Pathway, in consultation with ARMB investment staff, elected to exceed the target ranges for both the special situations strategy and for 2015 overall to support four existing special situation managers that returned to market and to establish new relationships with four special situation managers that are viewed as highly complementary to the portfolio.

1. Performance is based on September 30, 2015, market values adjusted for cash flows and currency fluctuations through December 31, 2015. Returns do not include any appreciation or depreciation in market value that occurred during the fourth quarter of 2015. As of September 30, 2015, the program had a since-inception net IRR of 13.6%.

Table 1. ARMB's 2015 Private Equity Activity vs. 2015 Annual Tactical Plan

	2015 Plan		2015 Actual	
Investment Strategy	No. of Partnerships	Total Commitments	No. of Partnerships	Total Commitments
Buyouts	Up to 10	Up to $125 million	7	$54.0 million
Venture Capital	Up to 10	Up to $100 million	4	$53.1 million
Special Situations	Up to 8	Up to $75 million	8	$76.6 million
Restructuring	Up to 6	Up to $50 million	1	$10.0 million
Subordinated Debt	—	—	—	—
Total	**Up to 20**	**Up to $187 million**	**20**	**$193.7 million**

NOTE: Amounts may not foot due to rounding.

During 2015, ARMB committed the largest portion of its capital to special situation partnerships: $76.6 million was committed to eight partnerships, which included four new manager relationships for ARMB: Advantech, Clearlake, Fortissimo, and Redview. In terms of geographic segmentation, five of these special situation funds will focus on U.S. opportunities, two will focus on opportunities in China, and one will focus on investments in Israel.

Commitments to buyout-focused partnerships accounted for the second-largest portion of 2015 commitment activity at $54.0 million, which consisted of five primary commitments and two secondary transactions. Six new manager relationships were established through buyout-focused partnerships: Bain[2], Baring Asia, Genstar, Nautic, Ridgemont, and Thoma Bravo Discover. Also during the year, ARMB committed $53.1 million to four venture capital managers, of which one—Battery Ventures[2]—represents a new relationship for ARMB. Further, ARMB also committed $10.0 million to one restructuring/distressed partnership in 2015, OCM Xb, which represents an existing manager relationship.

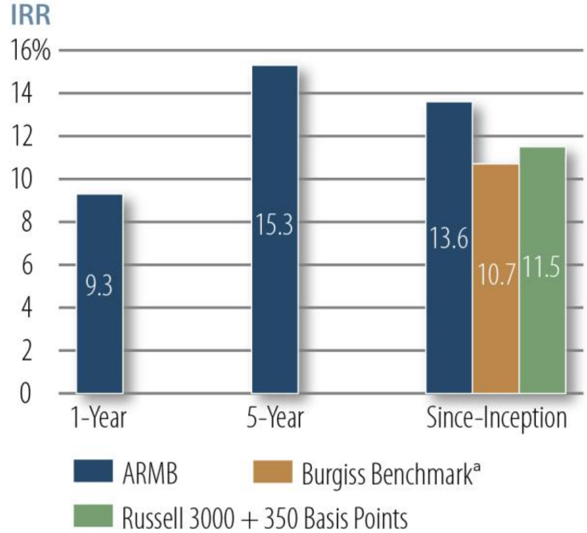
Performance

For the 1-year period ended December 31, 2015, the ARMB portfolio generated a net gain of $43.2 million and a 1-year return of 5.3%. In total, 25 partnerships in the portfolio generated 1-year gains in excess of $1.0 million. The portfolio's venture capital and U.S. buyout partnerships performed particularly well during 2015: venture capital partnerships collectively generated $23.4 million in gains and produced a 1-year return of 8.4%; U.S. buyout partnerships generated a 1-year gain of $21.8 million and a 1-year return of 8.7%. The strong performance of the portfolio's venture capital and U.S. buyout partnerships was partially offset by the underperformance of the portfolio's energy-focused and restructuring partnerships, which each faced challenging market conditions in 2015. Overall, the portfolio's 1-year return of 5.3% compared favorably with the public markets, exceeding the Russell 3000 by 480 basis points and the MSCI World Index by 560 basis points over the same time period.

2. New relationship established via a secondary transaction.

ARMB's private equity portfolio continues to generate strong long-term performance relative to public and private equity benchmarks. As shown in figure 1, since-inception performance exceeds the portfolio's public benchmark (Russell 3000 plus 350 basis points) on a dollar-weighted basis by more than 200 basis points. In addition, the portfolio outperforms the Burgiss pooled horizon returns for 2001- through 2015-vintage private equity funds by nearly 300 basis points. At the partnership level, the portfolio's mature vintages (2001–2010) continue to perform well: all 10 generations rank in the top half among private equity funds in their vintage years, as of September 30, 2015.

Figure 1. ARMB Performance vs. Private and Public Market Benchmarks
At September 30, 2015

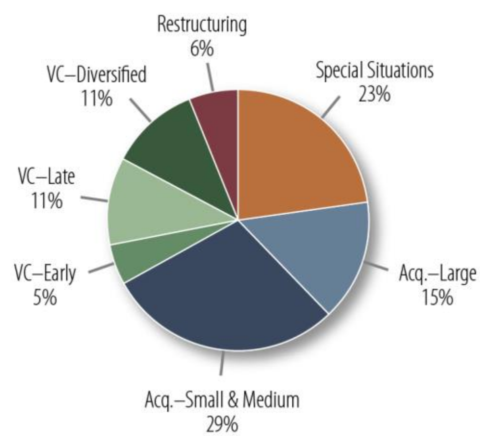


[a]Burgiss Private iQ global all private equity pooled horizon return for 2001- through 2015-vintage funds, as of September 30, 2015, as produced using Burgiss data.

Diversification

One of Pathway's objectives in constructing the ARMB private equity portfolio is to reduce risk by ensuring that the portfolio is well diversified by various metrics, including time, investment strategy, industry, geographic region, and investment manager. Pathway believes that ARMB's portfolio is currently well diversified: as of December 31, 2015, the portfolio consists of 149 partnerships across 17 vintage years and 69 managers, and contains more than 2,000 underlying portfolio companies. Figure 2 illustrates the current diversification of ARMB's private equity portfolio by investment strategy at the partnership level, based on partnership market value plus unfunded commitments through December 31, 2015.

Figure 2. Investment Strategy Diversification



NOTE: Based on partnership market values and unfunded partnership commitments through December 31, 2015.

Buyouts and Special Situations

By design, buyout partnerships constitute the largest portion of the ARMB portfolio, representing 44% of total exposure (partnership market value plus unfunded commitments). This exposure falls within the recommended target range of 30%–60%. The buyouts strategy is diversified by industry and regional focus, as well as by transaction type and size. The portfolio currently consists of commitments to 64 buyout partnerships: 41 partnerships that target small- and mid-cap companies and 23 partnerships that target large-cap companies (i.e., having enterprise values over $1.0 billion). Nineteen of the portfolio's buyout partnerships focus primarily on investments in Western Europe; two focus on investments in Asia. Pathway committed $54.0 million to seven buyout-focused funds during the year (includes two secondary transactions): Baring Asia IV (secondary), Baring Asia PE VI, Genstar VII, Nautic VIII, Project Rook (secondary), Ridgemont II, and Thoma Bravo Discover.

ARMB's special situation investments are also within Pathway's recommended target range, currently representing 23% of the total portfolio. The special situations strategy consists of 35 partnerships of varying sizes and with different areas of focus: 18 that implement multiple investment strategies, 15 that utilize industry-focused approaches, and two that specialize in turnaround opportunities. During the year, Pathway made commitments to eight special situation partnerships: Advantech Capital, Clearlake IV, EnCap X, Fortissimo IV, Insight IX, Redview Capital, Summit GE IX, and TA XII.

During the year ended December 31, 2015, the portfolio's buyout and special situation partnerships posted a combined return of 4.9% and generated aggregate gains of $23.9 million, which accounted for 55% of the portfolio's total gains for the year. Buyout-focused partnerships showed an increase in distribution activity during 2015: these partnerships returned $132.8 million, which represents a 6% increase over the $125.2 million distributed in 2014. Special situation partnerships returned $34.7 million during the year, down from the $41.9 million distributed in 2014. Over longer time horizons, ARMB's buyout and special situation partnerships continue to perform well, having collectively generated a 5-year return of 12.2% and a since-inception return of 12.4%, as of December 31, 2015.

Venture Capital

The ARMB portfolio includes 34 venture capital partnerships as of December 31, 2015, which utilize a variety of early-, late-, and multistage investment strategies. These partnerships represent 27% of the portfolio's total exposure, which was near the midpoint of Pathway's recommended target range of 15%–40%. Pathway committed $53.1 million to four venture capital funds (includes one secondary transaction) in 2015: Holtzbrinck Ventures VI, IVP XV, NEA 15, and Project Pavilion (secondary).

ARMB's venture capital partnerships continued to drive the performance of the private equity portfolio during 2015. Similar to the prior year, venture capital posted the strongest 1-year performance (in terms of both returns and gains) of any of the core investment strategies in the portfolio, generating a return of 8.4% and gains of $23.4 million. Annual performance was broadly based: 23 of the portfolio's 34 venture capital partnerships generated positive performance, of which 11 posted annual gains exceeding $1.0 million. TCV VII generated particularly strong performance during the year, posting annual gains of $5.1 million. Distribution activity was also strong during the year: $63.5 million was returned to investors, which is slightly below the previous record of $64.4 million in 2014. The venture capital strategy continues to demonstrate strong long-term performance: the strategy's 5-year and since-inception returns were 19.0% and 14.8%, respectively.

Restructuring
The ARMB portfolio currently comprises 16 distressed debt partnerships, which account for 6% of the total portfolio—a percentage unchanged from 2014. These partnerships employ trading and control-oriented strategies to target debt or other securities of distressed or troubled companies and are generally less correlated to traditional buyout and venture capital investments. During 2015, Pathway committed $10.0 million to one restructuring partnership, OCM Xb. This partnership was established in conjunction with OCM X to take advantage of the potential increase in the supply of distressed opportunities should there be a change from current market conditions. If such an opportunity does not arise within OCM X's 3-year investment period, then OCM Xb will effectively become OCM XI.

ARMB's distressed debt partnerships posted a 1-year return of –8.3% and a $4.1 million loss during 2015 as a result of distressed debt managers facing continued difficult market conditions for their strategy. Despite the negative annual performance, these partnerships distributed $7.0 million to the portfolio during 2015 and continue to deliver strong since-inception performance (18.8% IRR).

International
Pathway has diversified ARMB's portfolio by geographic region by committing to partnerships that target a variety of regions outside the United States. As of December 31, 2015, the ARMB international portfolio comprised 28 partnerships: 21 buyout partnerships, four special situation partnerships, two venture capital partnerships, and one restructuring/distressed partnership across 17 managers focused on Europe, Asia, and Israel. The portfolio's international exposure represented 14% of total exposure at December 31, 2015, and was within its long-term target range of 0%–35%. Pathway made commitments to six international partnerships during 2015 (including one secondary transaction): $5.2 million to Advantech Capital, $4.1 million to Baring Asia IV (Secondary), $4.3 million to Baring Asia PE VI, $12.3 million to Fortissimo IV, €7.0 million ($8.1 million) to Holtzbrinck Ventures VI, and $5.2 million to Redview Capital. Advantech, Baring Asia, Fortissimo, and Redview each represent new manager relationships for ARMB.

The portfolio's international partnerships posted a 1-year return of –2.4% for the period ended December 31, 2015. The negative return for the year was due almost entirely to currency depreciation: the euro and pound depreciated by approximately 10% and 5%, respectively, against the U.S. dollar during the year. The aggregate performance of the portfolio's international partnerships was positive for the year when measured in the partnerships' local currencies. Over the longer term, ARMB's international partnerships continue to generate solid performance: these partnerships have collectively generated a 5-year return of 9.8% and a since-inception return of 9.0%.

2016 Investment Plan

In 2016, Pathway will continue to expand and diversify ARMB's portfolio, adding commitments to both existing managers and new managers that meet Pathway's strict selection criteria and that complement the current portfolio. Pathway's objective is to target commitments of $200 million, subject to the availability of high-quality investment opportunities. Pathway expects to commit between $10 million and $25 million per partnership and up to $4 million per co-investment.

Consistent with its approach to date, Pathway will focus primarily on newly formed limited partnerships but will also selectively consider secondary partnership interests. In addition, Pathway will begin to target co-investment opportunities for the ARMB portfolio, investing up to 15% ($30 million) of the annual allocation in up to 12 co-investments in 2016. Pathway believes that a properly diversified co-investment portfolio is likely to meaningfully increase ARMB's gains by reducing management fees and carried interest; Pathway will only consider co-investment opportunities that have no or significantly reduced management fees and carried interest. Co-investments will be made primarily alongside buyout and special situation partnerships, both from within the ARMB portfolio and from Pathway's broader portfolio of relationships. Close consideration will be given to the impact that co-investments will have on the overall portfolio, with emphasis on limiting exposure to any one company, manager, strategy, geographic region, industry, or vintage year. ARMB's 2016 Tactical Plan is summarized in table 2.

Table 2. ARMB's 2016 Annual Tactical Plan

By Strategy

Investment Strategy	No. of Investments	Total Commitments
Buyouts	Up to 10	Up to $125 million
Venture Capital	Up to 10	Up to $100 million
Special Situations	Up to 8	Up to $75 million
Restructuring	Up to 6	Up to $50 million
Subordinated Debt	—	—
Total	**Up to 20**	**Up to $200 million**
Co-investments	Up to 12	Up to $30 million

When selecting partnerships for the ARMB portfolio, Pathway will continue to follow an opportunistic investment philosophy while maintaining its disciplined investment process and rigorous selection criteria to ensure that each partnership is a high-quality partnership. Because Pathway seeks only high-quality investment opportunities, the amount committed to any one strategy may vary from year to year depending on what opportunities are perceived to be the most attractive at the time. Under no circumstance will Pathway commit ARMB's capital to a partnership that does not meet its high-quality standards.

2016 Plan to Date

Through March 31, 2016, Pathway has committed $60.0 million on behalf of ARMB, or 30% of the 2016 Tactical Plan allocation target, to three partnerships. All three commitments were made in February and represent existing manager relationships. ARMB committed $25.0 million to Advent Int'l VIII, a buyout fund that targets mid- and large-market companies in Western Europe and North America; $25.0 million to TCV IX, a venture capital fund that focuses on growth equity investments in information technology companies based primarily in the United States; and $10.0 million to Thoma Bravo XII, a buyout fund that will make platform investments in U.S.-based software and services companies. In addition, Pathway has identified a number of potential partnerships for the ARMB portfolio, including five partnerships being raised by existing manager relationships and several partnerships being raised by managers not yet in the portfolio. It is too early to determine, however, whether these partnerships will be included in ARMB's portfolio in 2016; some may not meet Pathway's rigorous investment criteria and others may postpone fundraising until the following year, depending on market conditions and the general partners' investment pace.

Monitoring

Pathway's goals in monitoring ARMB's private equity portfolio are (1) to protect the portfolio's investments by reducing the occurrence of negative events within the portfolio, (2) to take full advantage of the rights offered to ARMB through its limited partnership agreements, and (3) to enhance the portfolio's returns. In 2016, Pathway will continue to fulfill its role as an active investor by maintaining active dialogue with general partners, attending regular meetings, and representing ARMB on advisory boards. During 2015, Pathway participated in 200 advisory board/monitoring meetings, attended 51 annual meetings, and reviewed 19 amendments related to the ARMB portfolio. Pathway will continue to monitor the investment pace of the portfolio and the partnerships' adherence to their stated investment strategies to ensure that the investments stay within the guidelines set forth by ARMB. Pathway will also continue to closely monitor the compliance of ARMB's partnerships with regard to ASC 820 (formerly SFAS 157) accounting standards.

Pathway will keep ARMB informed of developments in the portfolio by maintaining regular contact with ARMB staff and by providing quarterly reports on the performance and status of ARMB's private equity investments, as well as through Pathway's Online Management System (POMS), which provides a database of ARMB investments that is regularly updated with cash flows, market values, portfolio company valuations, and performance measurements.

Exiting

The strong pace of distributions within the ARMB portfolio continued during 2015: full-year 2015 distributions totaled $238.0 million, slightly below the prior record of $246.6 million set during 2014. Notably, total distributions exceeded $225 million for the third-consecutive year. Distribution activity was spread across all four of the portfolio's core strategies; the portfolio's buyouts strategy established a new record annual total in 2015, and the venture capital strategy posted the second-highest total in its history. Overall, 61 of the portfolio's 141 active partnerships as of December 31, 2015, made distributions in excess of $1.0 million in 2015.

Summary

Over the past 14 years, Pathway has developed a strong foundation for its portion of ARMB's private equity portfolio. In order to continue the development of the portfolio, Pathway recommends that ARMB adopt the following 2016 Tactical Plan:

- Target commitments of $200 million during the 2016 calendar year, subject to the availability of high-quality investment opportunities.

- Invest up to $25 million per partnership in up to 20 partnerships during 2016, in opportunities from both existing manager relationships and new manager relationships. Investments will typically range from between $10 million and $25 million; however, Pathway may invest smaller amounts in highly sought-after, oversubscribed funds if there is a strong likelihood that ARMB will be able to commit a larger amount to these general partners' next funds.

- Continue to adhere to the long-term target allocation ranges by strategy (buyouts, 30%–60%; venture capital, 15%–40%; and special situations, 20%–40%[3]) and by geographic region (up to 35% in international partnerships), while maintaining a flexible posture in order to invest in only high-quality partnerships.

- Selectively consider secondary partnership interests and co-investment opportunities.

Pathway will continue to maintain a highly selective approach, with an emphasis on identifying cohesive management teams that possess significant investment experience and that have demonstrated strong performance across multiple business and economic cycles.

3. Includes restructuring and distressed debt partnerships.

Pathway Capital Management

Mandate: **Private Equity** | **Hired:** **2002**

Firm Information	Investment Approach	Total ARMB Mandate
Founded in 1991, Pathway creates and manages private equity separate accounts and funds of funds for institutional investors worldwide. Pathway manages capital on behalf of some of the largest corporate and public pension plans, government entities, and financial institutions around the globe. The firm manages assets of $31.2 billion. Pathway is registered as an investment advisor with the SEC in the United States and as a portfolio manager and exempt market dealer in Ontario, Quebec, and Saskatchewan, Canada. Pathway's wholly owned UK subsidiary is regulated in the UK by the Financial Services Authority. **Key Executives:** Jim Chambliss, Managing Director Canyon Lew, Director	Pathway's decision-making process uses a team approach; no one individual has authority to make decisions regarding portfolio management without the input of other senior professionals. Final investment decisions are made by the Investment Committee comprised of four senior managing directors and four managing directors. Pathway is extremely selective in choosing private equity investment funds. Every partnership must met rigid standards regarding the overall quality of the investment opportunity, such as: ▪ Target markets that can support private equity investing; ▪ Long-term and proven private equity business model; ▪ Stable management team operating under a consistent firm culture; ▪ Proven access to high-quality investment opportunities and resources; ▪ Strong track record. **Benchmark:** Russell 3000 + 350 basis points and the Cambridge Associates vintage year peer comparison.	**Assets Under Management: (12/31/15)** Commitments: $1,860 million Market Value: $ 834 million CY 15 Management Fees: $2.4 million

Concerns: None

Performance

The since inception internal rate of return (IRR) for Pathway's ARMB portfolio is 13.5% through 12/31/2015, which compares favorably with the public market equivalent return for the Russell 3000 of 8.3%.

In Callan's vintage year comparison of the Pathway portfolio and the Cambridge database from 2001 through 2010, the Pathway portfolio is in the top quartile for 3 years and in the second quartile for 7 years.

Presentation Prepared For

Alaska Retirement Management Board

April 21, 2016

ANNIVERSARY 25 1991 2016
PATHWAY®
CAPITAL MANAGEMENT

- Pathway Update
- Private Market Environment
- 2016 Tactical Plan
- Portfolio Update
- Appendix

Pathway Update

Pathway Overview

- **Global Private Market Specialist**—Pathway creates and manages private market programs comprising primaries, secondaries, and co-investments for institutional investors worldwide.
- **Established**—1991
- **Assets Under Management**—$31.2 billion[1]
- **Global Investor Base**—Institutions across North America, Europe, and Asia
  - Corporate Pension Funds
  - Financial Institutions
  - Public Pension Funds and Trusts
  - Foundations and Endowments
  - Sovereign Wealth Entities
- **Ownership**—Independent, 100% partner owned
- **Personnel**—126 partners and employees, including 44 investment professionals, supported by a deep team of legal, accounting, client services, information technology, and administrative personnel
- **Locations**—California • Rhode Island • London • Hong Kong • Tokyo[2]

SEC-Registered ▪ FCA-Regulated ▪ SFC-Regulated[3]

1. Represents roll-forward market value plus undrawn capital at December 31, 2015.
2. Strategic alliance with Tokio Marine Asset Management, a Japanese investment adviser.
3. Pathway is an SEC-registered investment adviser. Pathway's wholly owned subsidiary, Pathway Capital Management (UK) Limited, is authorized and regulated by the Financial Conduct Authority, and Pathway's wholly owned subsidiary, Pathway Capital Management (HK) Limited, is licensed in Hong Kong by the Securities and Futures Commission to engage in certain marketing activities. Neither the U.S. Securities and Exchange Commission nor any other U.S. agency, non-U.S. securities commission, or state agency has approved this presentation, and none has confirmed the accuracy or determined the adequacy of this documentation. Any representation to the contrary is unlawful.

Organizational Chart

Partners

- **Douglas K. Le Bon** — Senior Managing Director
- **Valerie A. Ruddick** — Managing Director
- **James H. Reinhardt** — Senior Managing Director
- **Wayne D. Smith, CFA*** — Managing Director
- **Karen J. Jakobi** — Senior Managing Director & CIO
- **Milt M. Best, CFA** — Director & CCO
- **Alex M. Casbolt†** — Managing Director
- **Curtis P. Gerlach** — Director & CFO
- **James R. Chambliss** — Managing Director
- **Jason C. Jenkins, CFA** — Director
- **Vincent P. Dee, CFA** — Managing Director
- **Canyon J. Lew** — Director
- **James E. Heath†** — Managing Director
- **Matthew M. Lugar*** — Director
- **Richard S. Mazer** — Managing Director
- **Derrek I. Ransford, CFA** — Director
- **Terrence G. Melican** — Managing Director
- **Pete Veravanich** — Director

Investing & Reporting

- Paul J. de Groot, CFA — Sr. Vice President
- Bryan P. Nelson, CFA — Sr. Associate
- Wyatt H. Geiger — Sr. Investment Analyst
- Trisha A. Mandalia† — Investment Analyst
- Simon Y.S. Lau‡ — Sr. Vice President
- Hiral G. Savani, CPA — Sr. Associate
- Petros Krappas† — Sr. Investment Analyst
- Paolo Manaloto — Investment Analyst
- Mikael Sand, CFA† — Vice President
- Kevin W. Bland — Associate
- Brett W. Richardson — Sr. Investment Analyst
- Ermias J. Nessibu, CPA — Investment Analyst
- John T. Ruggieri, CFA* — Vice President
- Jeffrey L. Buress* — Associate
- Alice M. Cope — Investment Analyst
- Jun Tae Park‡ — Investment Analyst
- Nicholas J. Siemsen, CFA — Vice President
- Jeremy N. Ebstein — Associate
- Andrew Fojanesi* — Investment Analyst
- Benjamin Pittsley* — Investment Analyst
- Joseph C. Tien‡ — Vice President
- Justin C. Maney, CFA — Associate
- Matthew T. Kahn — Investment Analyst
- Nathaniel S. Sandlow — Investment Analyst
- Stefan Goettl† — Sr. Associate
- Blessie Vizconde — Associate
- Stephen M. Kraman — Investment Analyst
- Richard L. Wang — Investment Analyst

Corporate Accounting

- Christine P. Cornejo, CPA (inactive) — Sr. Vice President–Corporate Finance
- Lori L. Espinosa — Corp. Accounting Mgr.
- Eric A. Thomson, CPA — Sr. Corp. Accountant
- Mitzi Ledesma — Payroll/HR Administrator
- Angel A. Aguilar Jr., CPA — Controller–Corporate Finance
- Stacey A. Jaswell — Sr. Corp. Accountant
- Amanda I. Erwin — Corp. Accounting Administrator

Fund Accounting

- Raquel J. Nicolas, CPA — Sr. Vice President–Finance
- Lily Li, CPA (inactive) — Fund Accounting Mgr.
- Jennifer L. Lam — Fund Accountant
- Rochele L. Porpora — Sr. Operations Specialist
- Brandon J. Turmala — Cash Accountant
- Katie Doan, CPA (inactive) — Sr. Controller
- Jason Jung Sup Lee, CPA — Sr. Fund Accountant
- Lauren C. Lopez — Fund Accountant
- Helen Luna Benitez — Operations Specialist
- Won C. Chung, CPA (inactive) — Controller
- Gracielle V. Samson — Sr. Fund Accountant
- Jennifer Moreno — Fund Accountant
- Sandra G. Fontal — Operations Specialist
- Kenneth Y. Loh, CPA (inactive) — Controller
- Jana J. Beaupre, CPA — Fund Accountant
- Carolyne P. Truong — Fund Accountant
- Lynda T. Phan — Operations Specialist
- Mark V. Alviz, CPA (inactive) — Fund Accounting Mgr.
- Armando Giles — Fund Accountant
- Heidi T. Jauregui — Cash & Operations Manager
- Uyen T. Hoang — Cash Accountant
- Patrick Y. Kim, CPA — Fund Accounting Mgr.
- Aneesha Joshi — Fund Accountant
- Katherine M. Dabu — Sr. Operations Specialist
- Raymond Nguyen — Cash Accountant

Tax

- Dustin T. Hankins, JD, CPA — Sr. Tax Manager
- Erik Gonzalez, CPA — Sr. Tax Accountant
- Michael L. Wintroub — Tax Accountant
- Rose L. Carter, CPA — Sr. Tax Manager
- Karen T. Pham — Tax Accountant
- Allison M. Altman — Tax Administrator

Legal

- Ashok K. Tripathi, Esq. — Sr. VP & General Counsel
- Charles H. Caliman II, Esq. — Sr. Counsel
- Patricia C. Kilmann — Mgr.–Legal Administration
- Camille L. Pedigo, Esq. — VP & Asst. General Counsel
- Janet J. Hathaway, Esq. — Counsel

Client Services

- Linda S. Chaffin — Sr. Vice President
- John V. Brescia* — Vice President
- Martin J. Wing — Associate
- Gerard R. Branka* — Vice President
- Jessica C. Campbell — Associate
- Matthew J. Bedinger — Marketing Analyst

Compliance

- Stefanie A. Karp — Sr. Associate
- Isabel M. Rosser — Compliance Coordinator

Systems Administration

- Brian M. Leyran — Systems Administration Mgr.; 3 Staff

Software Development

- Michael C. Long — Mgr.–Software Development; 4 Staff

Editorial & Production

- Christopher M. Lopez — Editor & Production Manager; 3 Staff

HR & Admin.

- Laurie N. Kiley — Vice President of HR; 19 Staff

*Rhode Island staff. †London staff. ‡Hong Kong staff.

Private Market Environment

Overview

- M&A exit markets remained strong in 2015, underpinning the private equity industry's performance during the year.
- Market volatility and uncertainty increased significantly in 2H15, driven by depressed energy commodity markets, slowing growth in China, and the end of zero-interest-rate policy in the U.S.
- Non-investment-grade credit markets have become more restrictive; leveraged loan and high-yield bond credit spreads have increased by more than 150 basis points since the beginning of 2015.
- High-yield distress ratio is at its highest level since August 2009, driven by distressed energy debt. Default rates remain low but are expected to increase.
- Global buyout investment activity is increasing at a moderate pace; general partners remain disciplined in the face of high valuations, strong competition, and increasing volatility.
- Increasing market volatility and uncertainty may generate attractive opportunities for private equity firms to deploy capital.

2016 Tactical Plan

2016 Tactical Plan Review and Progress

At April 15, 2016

	2016 Plan	Actual to Date
Commitments	$200 million	$60.0 million
Number of Partnerships	Up to 20 partnerships	3 primary partnerships
Size of Investments	$10–$25 million	$20.0 million avg. commitment
Investment Strategies	Buyouts, Venture Capital, Special Situations, and Restructuring	Buyouts (2), Venture Capital (1)

	2016 Plan		Commitments to Date	
Strategy	No. of Inv.	Targeted Commitments ($MM)	No. of Inv.	Commitments ($MM)
Buyouts	Up to 10	Up to 125	2	35.0
Venture Capital	Up to 10	Up to 100	1	25.0
Special Situations	Up to 8	Up to 75	–	–
Restructuring	Up to 6	Up to 50	–	–
Total	**Up to 20**	**Up to 200**	**3**	**60.0**
Co-investments	Up to 12	Up to 30	—	—

Co-investment Program Overview

The primary rationale for completing co-investments is to reduce private equity program expenses by eliminating or significantly reducing management fees and carried interest.

- Invest only alongside what Pathway deems to be high-quality “Qualified” GPs, which have the following characteristics:
  - Pathway conducted primary due diligence on and invested in the GP’s most recent fund.
  - The GP continues to be considered in good standing based on an assessment of the organization and its investment performance.
  - The GP has high investment success percentages and also has high capital-preservation ratios.
- Conduct detailed due diligence on opportunity
  - Utilizing primarily the GP’s and its consultants’ due diligence
  - Focusing on governance, valuation, deal structure, management, investment thesis, key risks, and fit with GP’s strategy, among other things
- Construct diversified co-investment portfolios with what Pathway determines to be the appropriate exposure to each portfolio company when considering exposure through primary commitments and co-investments.

Proposed Co-investment Program Guidelines

Annual Co-investment Amount	Up to 15% of annual private equity commitments
Target Co-investment Amount	Up to $4.0 million per co-investment
Target Co-investment Number	5 to 8 co-investments per annum
Company Limit	No more than 1.5% of private equity program based on market value at the time of investment when considering co-investment amount and primary fund investment
Eligible Co-investments	Will consider co-investments from funds managed by Qualified GPs in which ARMB is an LP and in which ARMB is not an LP
Diversification	No undue concentration by transaction size, sector, geographic region, manager, or vintage year

Portfolio Update

Portfolio Overview

At April 15, 2016

($ in millions)

Inception	2002
Total Commitments[a]	$1,921.5
No. of Commitments	149
No. of Managers	69
% Contributed	79%
Weighted Avg. Age (Years)	5.9
Current Companies[b]	2,439
S-I Net IRR[c]	13.5%
DPI	0.98x

[a]Commitments to non-USD-denominated partnerships are accounted for by multiplying unfunded commitments by the most recent quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated partnerships to fluctuate quarterly.

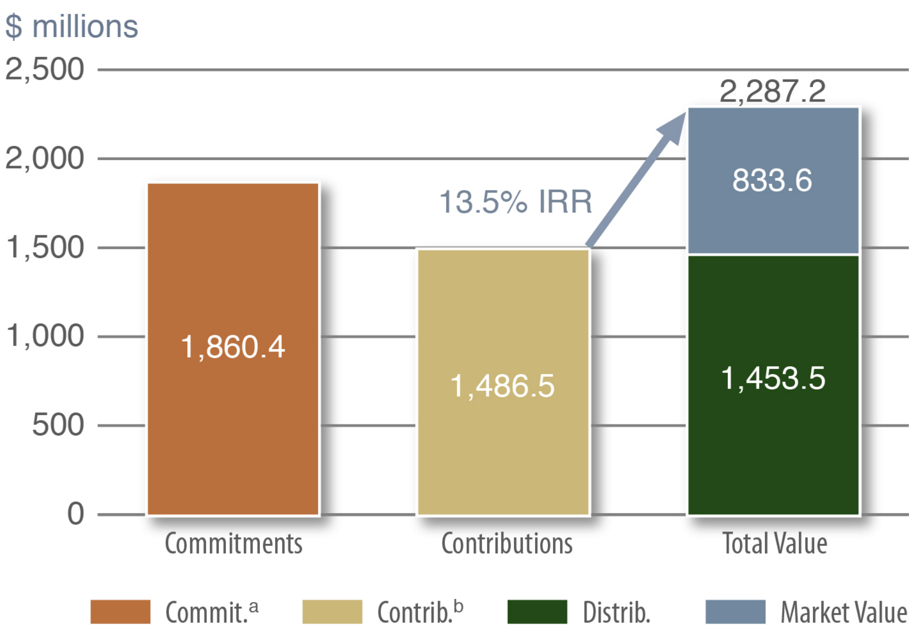
[b]As of September 30, 2015.

[c]Based on the most-recent information provided by the general partners, adjusted for cash flows through December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.

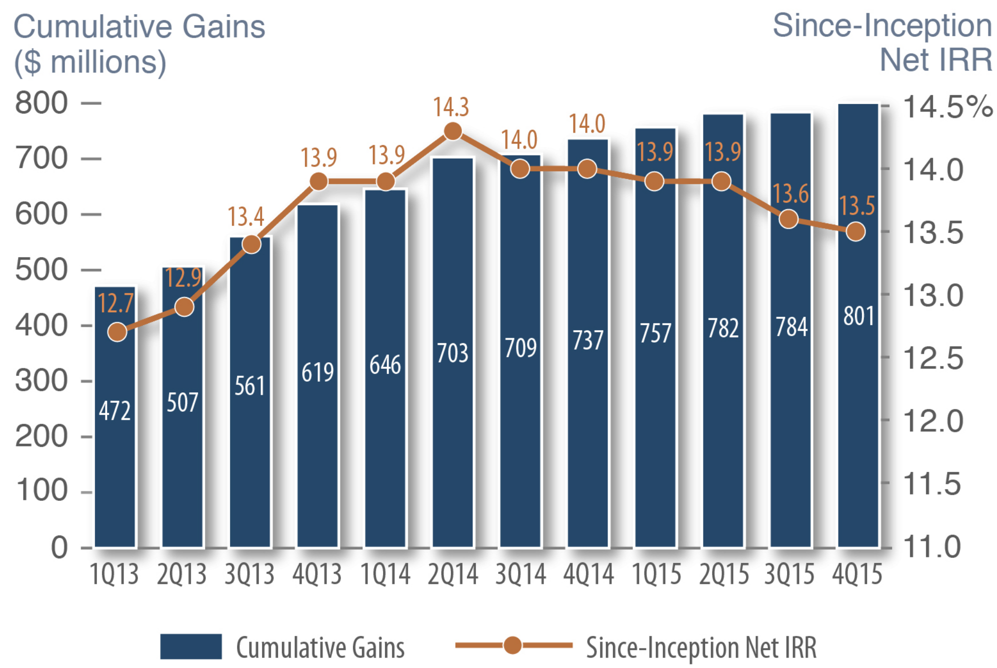
Performance Summary

At December 31, 2015

Financial Summary



Since-Inception IRR and Cumulative Gain/Loss Progression



NOTE: Performance is based on the most-recent information provided by the general partners, adjusted for cash flows through December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.

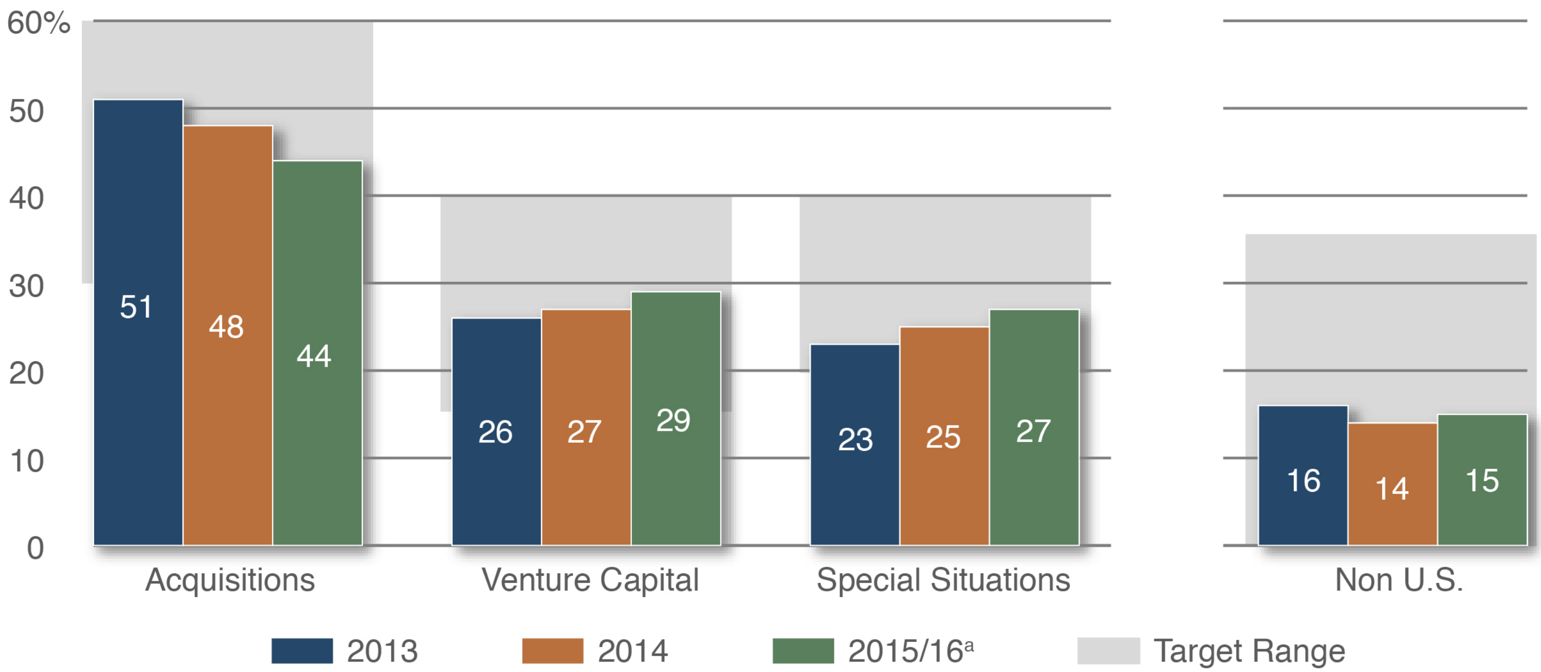
[a]Commitments to non-USD-denominated partnerships are accounted for by multiplying unfunded commitments by the quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated partnerships to fluctuate quarterly.

[b]Includes capital contributed for management fees called outside the total commitment.

Investment Strategy Diversification

As a % of Partnership Market Value plus Unfunded Commitments

At April 15, 2016



NOTE: Based on partnership market values and unfunded partnership commitments at December 31 for each year shown.
[a]Based on preliminary partnership market values and unfunded partnership commitments at December 31, 2015, plus new commitments made through April 15, 2016. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.

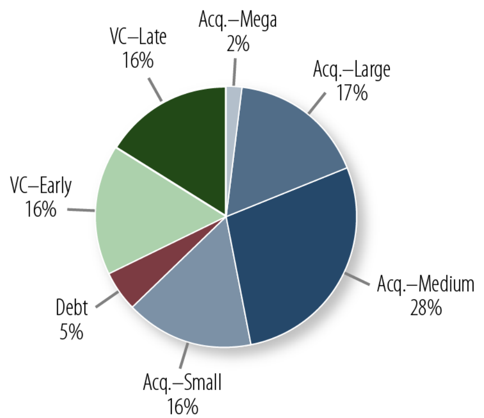
- Each investment strategy is within its long-term allocation target range, as of April 15, 2016.

Portfolio Diversification

As a % of Company Market Value—2,439 Investments

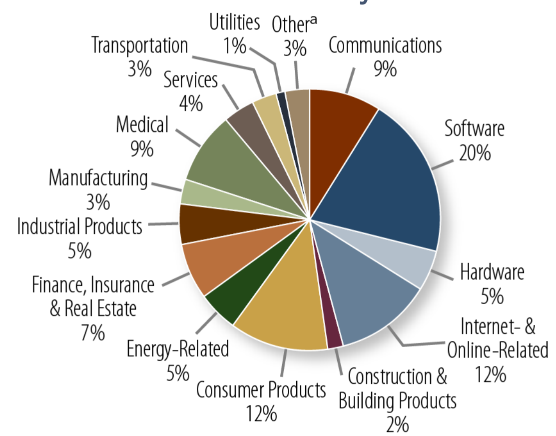
At September 30, 2015

Strategy



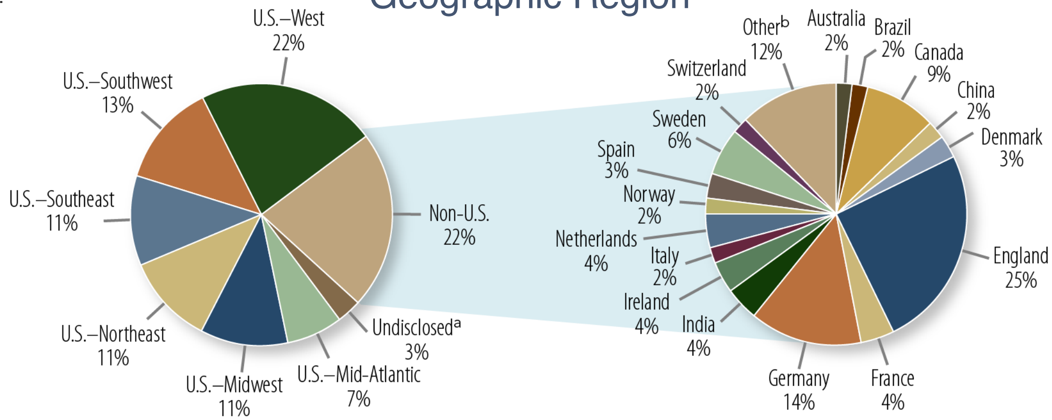
NOTES: Acquisition substrategies are based on the following ranges of total enterprise values: Mega >$10 billion, Large $1–$10 billion, Medium $200 million–$1 billion, and Small <$200 million. Excludes investments for which the general partners have not provided investment strategy classifications.

Industry



[a]Comprises agriculture-, forestry-, and fishing-related, as well as investments for which the general partners have not provided industry classifications.

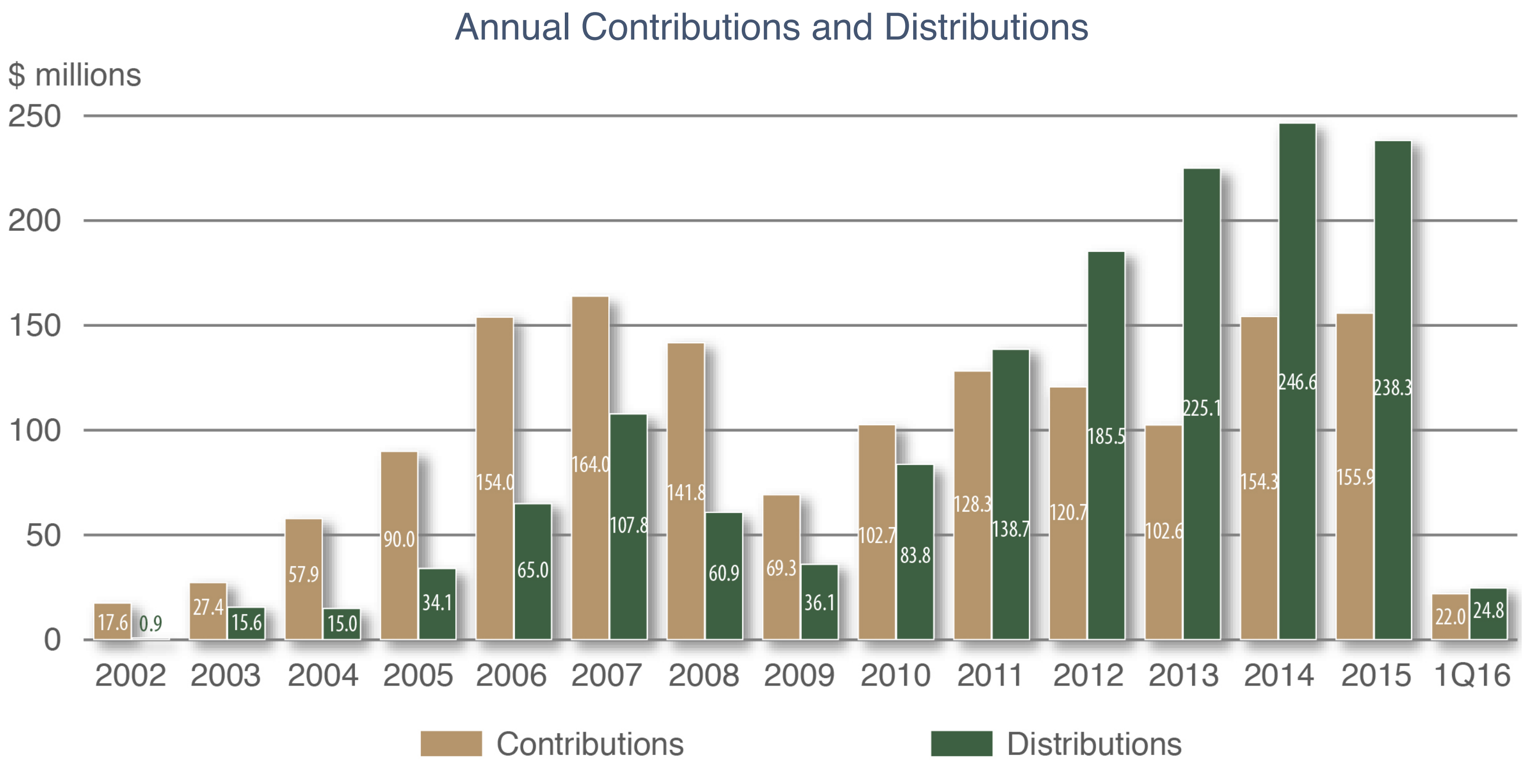
Geographic Region



[a]Comprises investments for which the general partners have not provided geographic classifications.
[b]Comprises regions that each account for less than 2% of the portfolio's non-U.S. market value: Argentina, Austria, Belgium, Bermuda, British Virgin Islands, Cayman Islands, Colombia, Czech Republic, Finland, Greece, Hong Kong, Hungary, Iceland, Israel, Japan, Kenya, Lithuania, Luxembourg, Mexico, New Zealand, Philippines, Poland, Portugal, Russian Federation, Saudi Arabia, Scotland, Singapore, Slovenia, South Africa, South Korea, Taiwan, Turkey, Ukraine, and United Arab Emirates.

Contribution and Distribution Activity

At March 31, 2016



- Total contributions during 2015 were in line with contribution activity during 2014 ($156 million vs. $154 million).
- The $238 million distributed by ARMB's partnerships in 2015 represents the second-largest annual distribution total since the portfolio's inception, slightly below the annual record set in 2014.
- 2015 marked the fifth-consecutive year that the portfolio has been cash flow positive: distributions outpaced contributions by $82 million in 2015.
- Contribution and distribution activity slowed in the beginning of 2016 but may pick up as the year progresses.

Portfolio Performance

($ in millions)

	No. of Partnerships	Commitments[a]	Contributions[b]	Distributions	Market Value	Total Value	Gain/ Loss	Since-Incep. Net IRR
Dec 31, 2015	149	$1,860.4	$1,486.5	$1,453.5	$833.6	$2,287.2	$800.7	13.5%
Dec 31, 2014	129	1,672.6	1,330.5	1,215.2	852.3	2,067.5	736.9	14.0%
YOY Change	**20**	**$187.7**	**$155.9**	**$238.3**	**($18.6)**	**$219.7**	**$63.8**	**-0.5%**

NOTE: Amounts may not foot due to rounding. Performance is based on the most-recent information provided by the general partners, adjusted for cash flows through December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.
[a]Commitments to non-USD-denominated partnerships are accounted for by multiplying the unfunded commitments by the quarter-ending exchange rate, then adding the result to cumulative capital contributions, causing commitments to non-USD-denominated partnerships to fluctuate.
[b]Includes capital contributed for management fees called outside the total commitment.

- During the 1-year period ended December 31, 2015, ARMB's portfolio generated a gain of $63.8 million and an annual return of 7.8%
  - The portfolio posted positive performance in all 4 quarters of the 1-year period.
  - The portfolio's venture capital and U.S. buyout partnerships drove performance in 2015, generating 1-year returns of 11.4% and 11.7%, respectively.
  - 34 partnerships in the portfolio generated gains in excess of $1 million during the year.
  - The portfolio's 1-year return of 7.8% compares favorably with public indices, exceeding the Russell 3000 by 730 basis points and the MSCI World Index by 810 basis points over the same time period.

Recent Significant Events within the ARMB Portfolio

Notable IPO Pricings

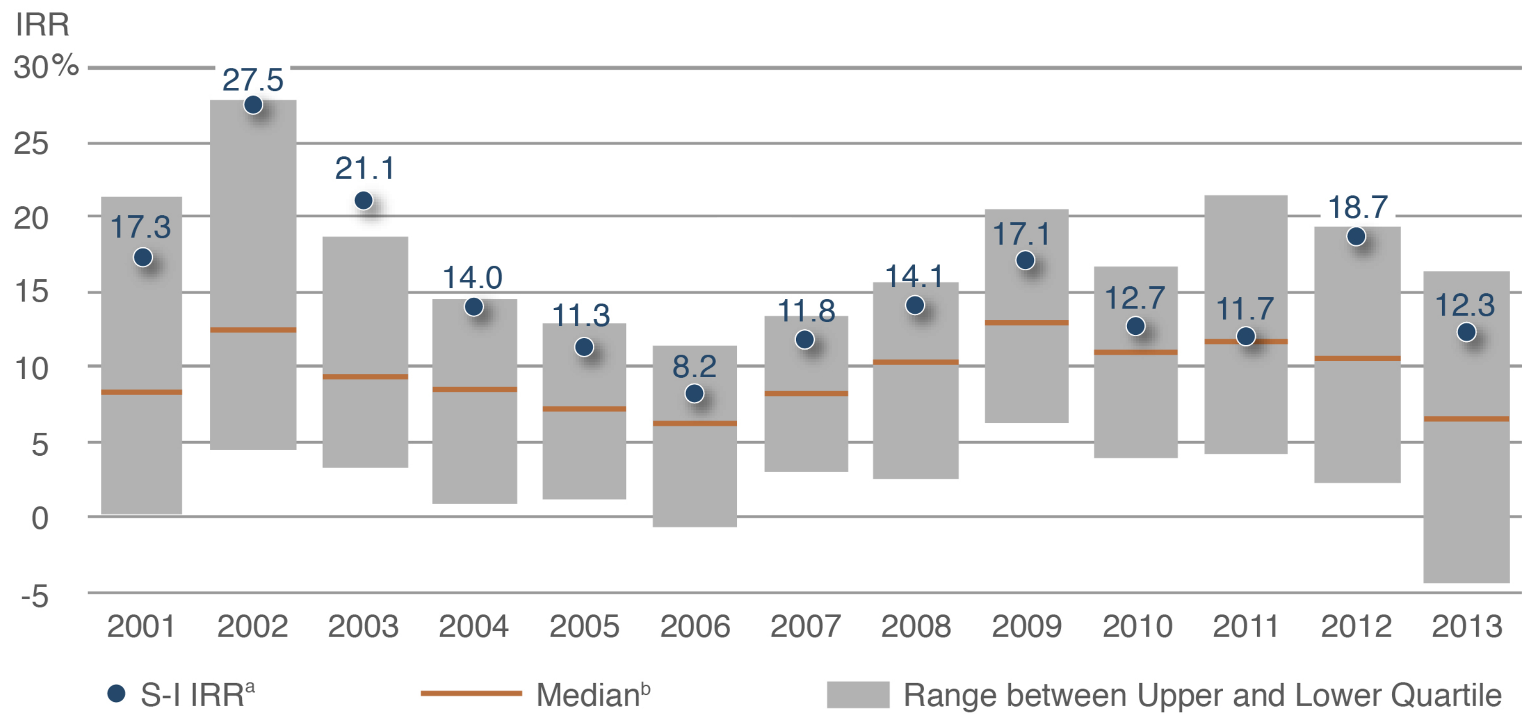
- Surgery Partners
- Shopify
- CytomX Therapeutics
- SkinnyPop Popcorn
- Tallgrass Energy
- PFG Performance Food Group

M&A Activity

- Business Insider
- Brightree
- Felix Energy
- SolidFire
- fullbeauty
- Oculeve
- Par Pharmaceutical
- DigiCert
- Dent Wizard
- Argotec Urethane Film & Sheet
- Kele
- Petco
- Capsule
- AlliedBarton Security Services – Local Response | National Support
- Spinifex
- Novira Therapeutics

Vintage Year Performance vs. Industry Benchmarks

At December 31, 2015

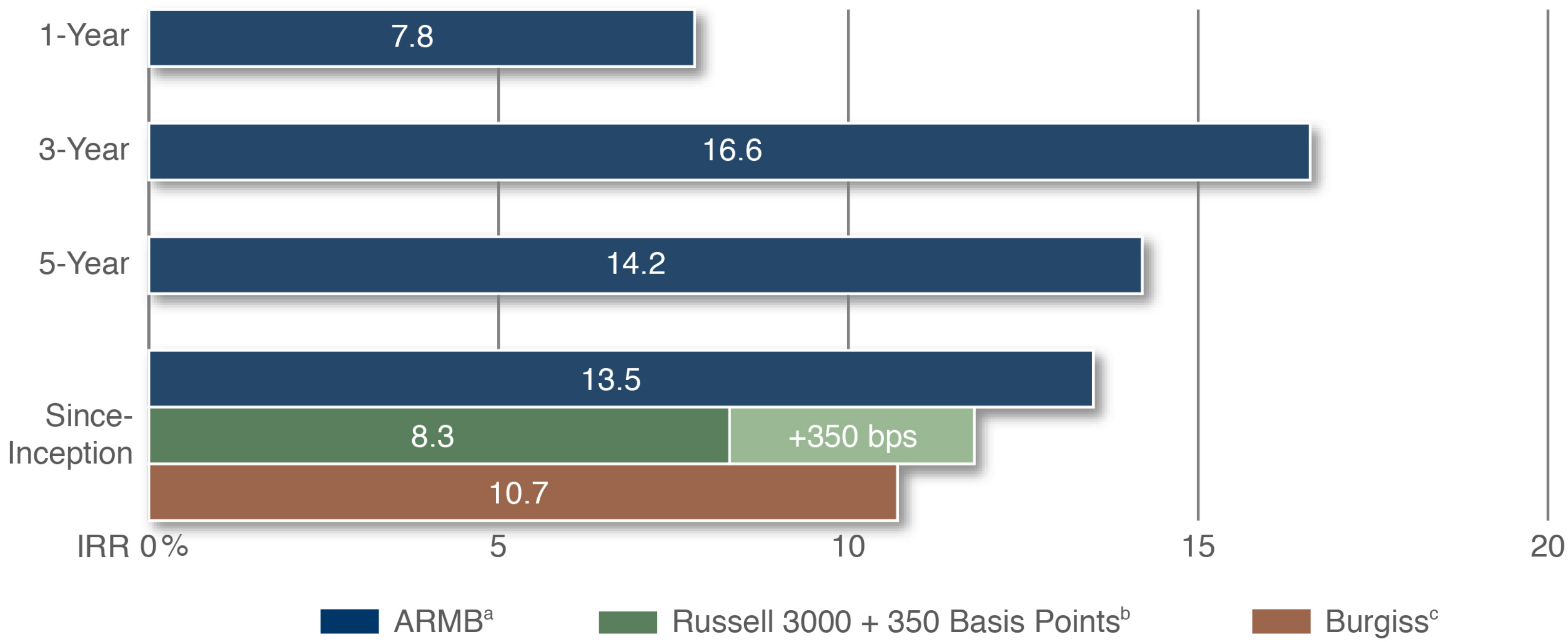


[a]Based on the most-recent information provided by the general partners, adjusted for cash flows through December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.
[b]Burgiss Private iQ global all private equity median return benchmark, as of September 30, 2015, as produced using Burgiss data.

- All 13 of the portfolio's more-mature vintage years (2001–2013) rank in the top half of performers for their vintages and outperform their median benchmarks by an average of more than 570 basis points.

Net Performance vs. Public and Private Market Indices

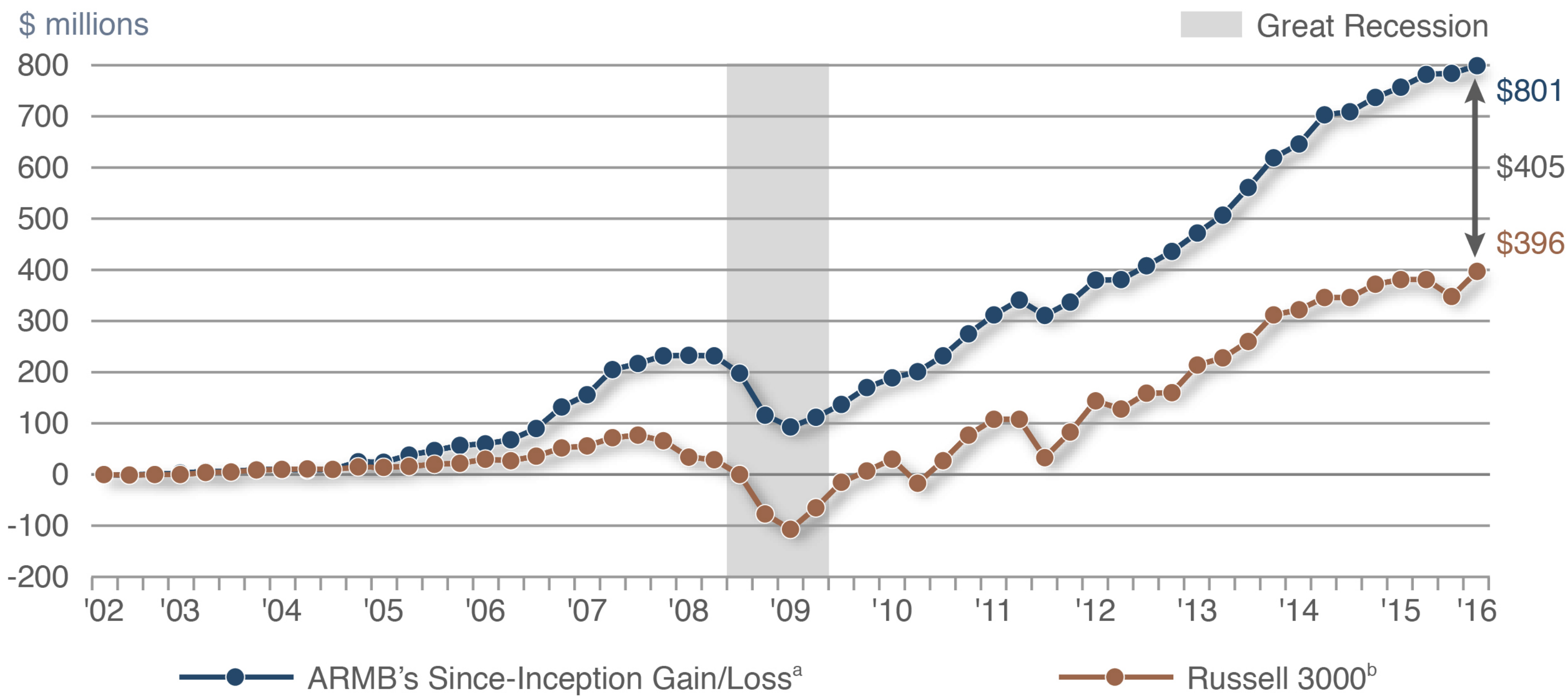
At December 31, 2015



[a]Based on the most-recent information provided by the general partners, adjusted for cash flows tahrough December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.
[b]Performance was derived by applying ARMB's cash inflows and outflows to the index's daily returns.
[c]Burgiss Private iQ global all private equity pooled horizon return for 2001- through 2015-vintage funds, as of September 30, 2015, as produced using Burgiss data.

Historical Since-Inception Net Gain

At December 31, 2015



[a]Based on the most-recent information provided by the general partners, adjusted for cash flows through December 31, 2015. As of the printing of this presentation, 115 of the portfolio's 141 active partnerships, representing 81% of the portfolio's market value, had provided December 31, 2015, data.
[b]Equals the dollar-weighted Russell 3000.

- The portfolio's outperformance of the Russell 3000 has resulted in $405 million of incremental gains above the index since the program's inception.

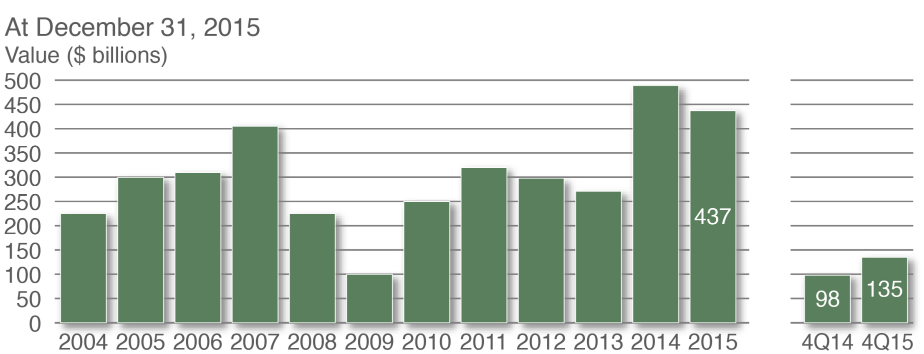
Appendix

M&A and IPO Exit Markets

- M&A exit markets for PE-backed companies remain strong; however, IPO markets have slowed considerably.

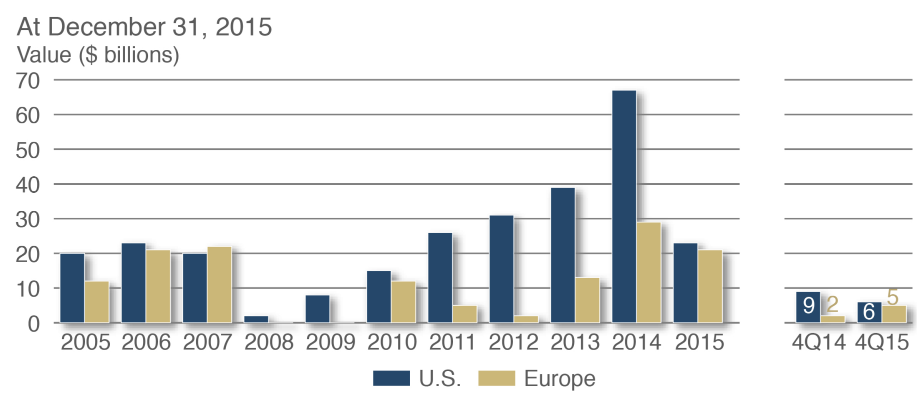
- M&A exit activity for PE-backed companies totaled $437bn in 2015, down from the record-setting amount in 2014 but still the second most active year for private equity M&A exits.
  - Strategic acquirers with record-high cash balances and access to attractive financing are seeking acquisitions for growth and scale.
- Notable 2015 M&A exits include SunGard (acquired by FIS for $9.1bn), Suddenlink Communications (acquired by Altice for $9.1bn), and Avolon Holdings (acquired by Bohai Leasing for $7.6bn).
- Volatility in global equity markets has adversely impacted IPO issuance in 2015.
  - PE-backed IPO issuance in the U.S. and Europe has declined by 54% in 2015 from the prior year.
  - PE-backed companies remain a key driver of the IPO market: in 2015, PE-backed companies represented approximately 75% of the U.S. IPO market.

Global PE-Backed M&A Exit Activity



SOURCE: Mergermarket.

Global PE-Backed IPO Issuance



SOURCE: Thomson Reuters.

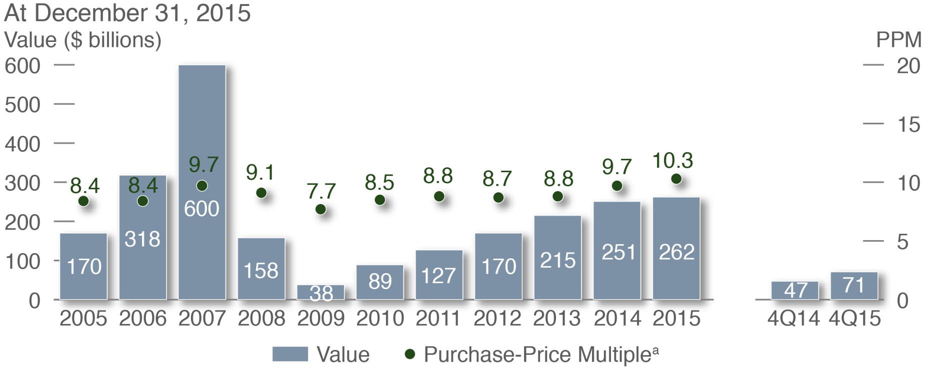
Buyout Markets

- Transaction activity is increasing at a moderate pace; investment environment is becoming more attractive.

- Global buyout investment activity has been supported by strong M&A markets and accommodative credit markets. GPs have been cautious, however, in the face of rising valuations in a competitive market.
  - In 2015, buyout firms announced $262bn in investments in U.S.-based companies—an increase of just 4.2% from the prior year.
  - GPs are maintaining discipline and are structuring their transactions conservatively overall.
- Average purchase-price multiples in both the U.S. and Europe have increased since 2009, driven in part by a higher proportion of technology-related buyouts in recent periods.
  - Purchase-price multiples appear to have peaked in 3Q15. Valuations declined in 4Q15 in both the U.S. and Europe.
- Both recent market volatility and an increase in uncertainty are expected to generate attractive opportunities to deploy capital.
  - More-constrained credit markets and increasing volatility is impacting valuations and creating dislocation across multiple sectors.

U.S. Buyout Investment Activity

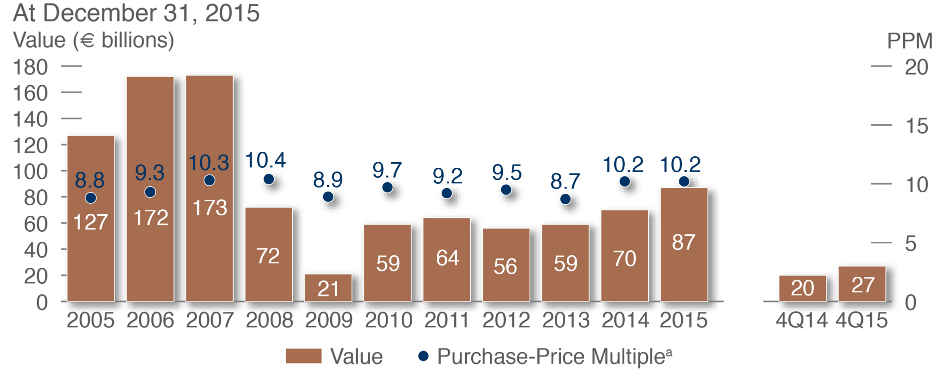
At December 31, 2015



SOURCE: Thomson Reuters and S&P Capital IQ.
[a]Average PPM (as a multiple of trailing EBITDA) of all LBOs.

European Buyout Investment Activity

At December 31, 2015



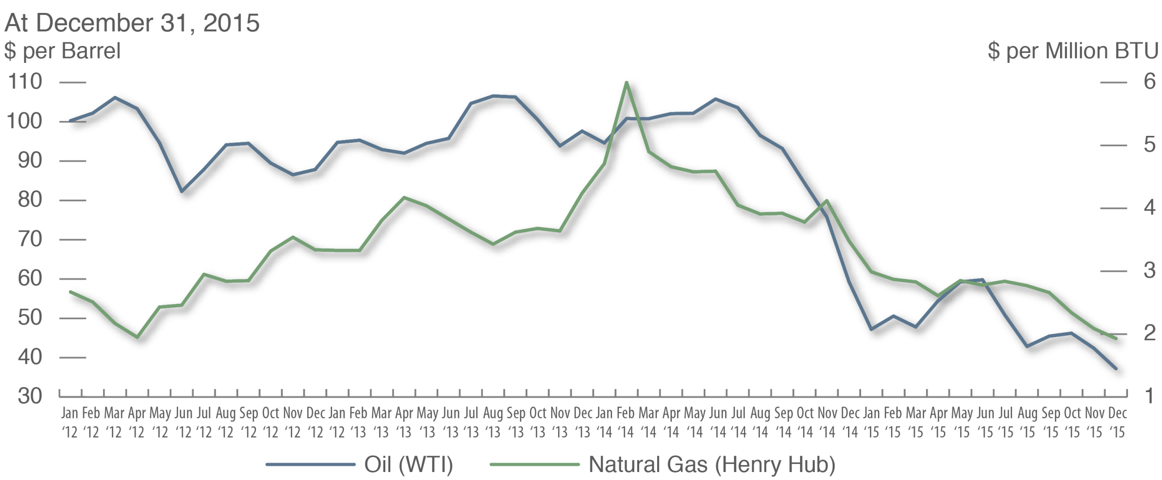
SOURCE: CMBOR, Ernst & Young, Equistone Partners Europe, and S&P Capital IQ.
[a]Average PPM (as a multiple of trailing EBITDA) of LBOs with EV of €500 million or more.

Energy Private Equity

- The downturn in energy commodity markets may generate opportunities for PE firms to deploy capital.

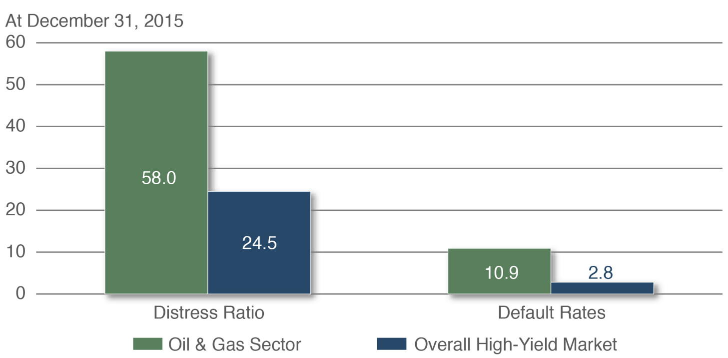
- Energy-focused PE funds accounted for 9% of global PE fundraising over the past 5 years and for 12% in 2015.
  - Many generalist PE firms have also invested in the energy sector.
  - The impact on valuations is varied by a variety of factors: exposure to specific energy sectors, oil/gas exposure mix, and basin exposure, among others.
  - Oil field services and heavily leveraged E&P companies are the most vulnerable in the current environment. Well-capitalized E&P companies with modest debt and strong exposure to the most-economic basins may weather the downturn.
- Capital markets are currently closed for most non-investment-grade oil and gas companies.
  - Opportunities may arise to j/v with capital-constrained producers or to acquire attractive assets from distressed sellers.
- There is a high level of distress among non-investment-grade oil and gas companies.
  - The distress ratio (58.0%) and default rates (10.9%) for oil and gas companies are significantly higher than those for the overall high-yield market.

Oil & Natural Gas Spot Prices



SOURCE: U.S. Energy Information Administration.

Oil & Gas Sector vs. Overall High-Yield Market



SOURCE: Standard & Poor's Ratings Direct.

Non-Investment-Grade Credit Markets

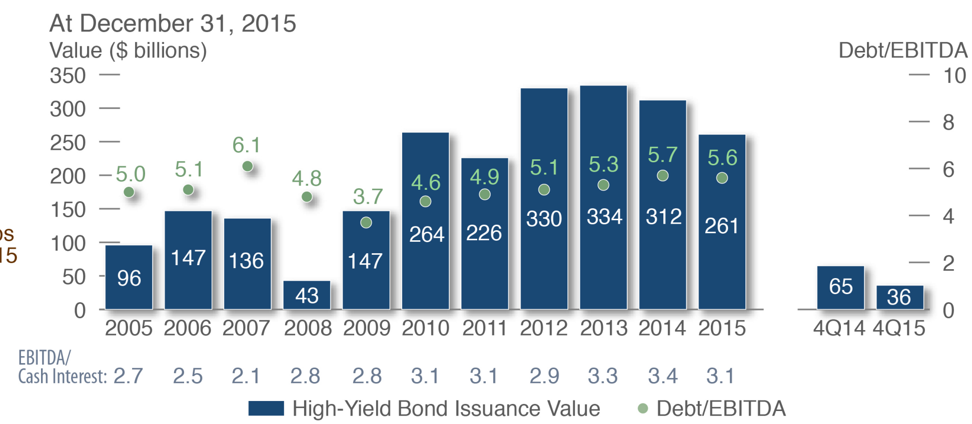
- Leveraged credit markets have become more restrictive as a result of an increase in market volatility and uncertainty.

- Credit spreads have increased to their highest levels since 2011.
  - Spreads for U.S. high-yield bonds averaged 775bps at the end of 2015, up from 561bps at the end of 2Q15.
- Non-investment-grade debt issuance in 2015 has slowed considerably from the prior year.
  - High-yield issuance and leveraged loan issuance totaled $261bn and $421bn in 2015, down 16% and 21%, respectively, from 2014.
  - Weak credit markets are impacting new buyout investment activity (e.g., repricing of Veritas buyout).
- New leveraged-lending guidelines issued by U.S. regulators is constraining the lending environment for non-investment-grade companies.
  - Total debt-to-EBITDA multiples of greater than 6.0x would raise concerns for most companies.

High-Yield Bond Spreads Over U.S. Treasuries

SOURCE: Standard and Poor's.

U.S. High-Yield Issuance



SOURCE: SIFMA and S&P Capital IQ.

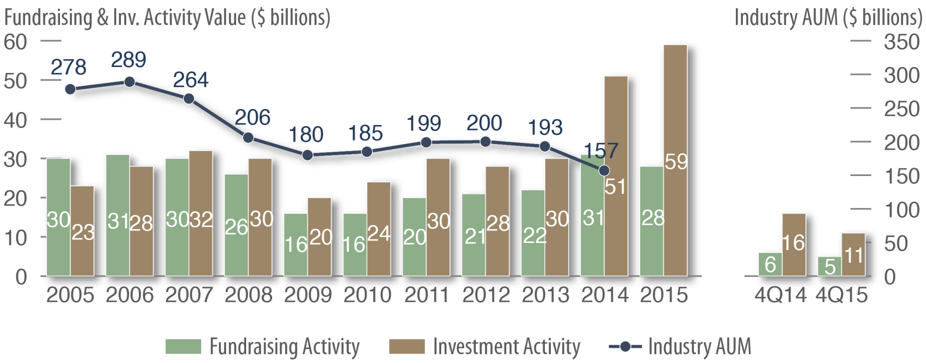
U.S. Venture Capital

- Technological advancements are driving opportunities in venture capital.

- The rapid pace of innovation and adoption across multiple disciplines is driving returns and opportunities in venture capital.
  - Areas of opportunity and interest are constantly shifting in response to technological advancements and adoption rates.
  - More than 140 privately held venture-backed companies have achieved valuations of $1.0bn or greater.
- M&A exit markets for venture-backed companies remain favorable although there has been a recent slowdown in venture capital–backed IPOs, which is in line with the overall market.
  - 89 venture-backed companies priced their IPOs on U.S. exchanges in 2015; these companies generated $10.2bn in proceeds—a decrease of 29% and of 39%, respectively, from 2014.
- General partners are becoming increasingly wary and cautious due to rising valuations, particularly for later-stage companies.
  - The strong increase in investment activity levels in 2014 and 2015 has been driven by “mega” rounds of $100mm or greater in late- and growth-stage companies.

U.S. Venture Capital—Fundraising, Investment Activity & Industry AUM

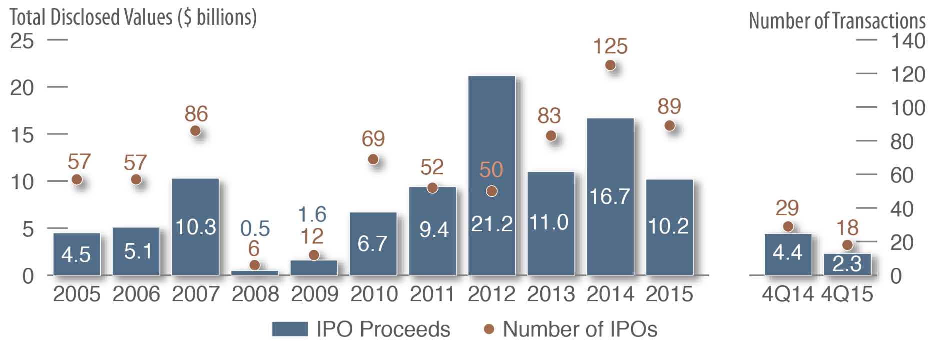
At December 31, 2015



SOURCE: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report, based on data from Thomson Reuters.

U.S. Venture Capital—IPO Activity

At December 31, 2015



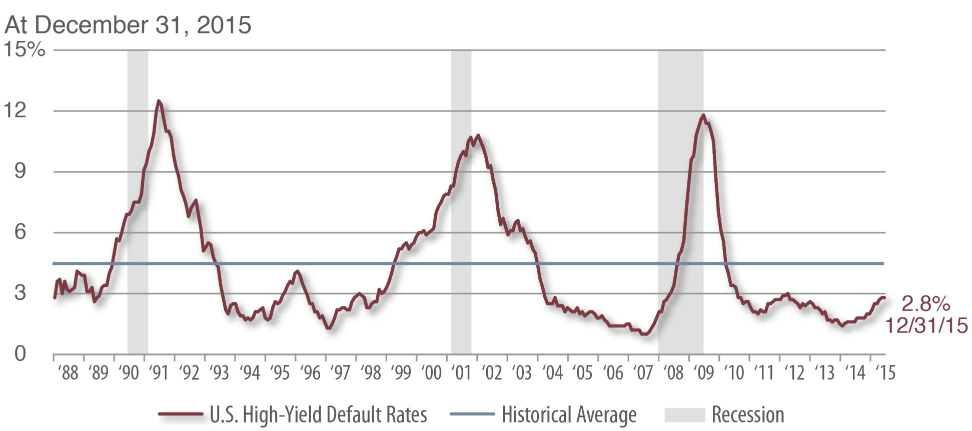
SOURCE: Bloomberg and Thomson Reuters.

Distressed Debt Markets

- Distressed debt investment activity remains at low levels, but prospective opportunity is increasing.

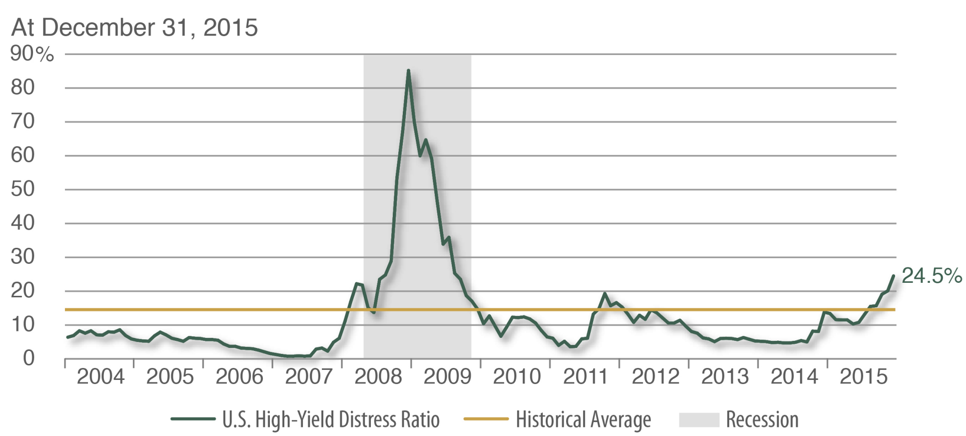
- Traditional distressed debt opportunity set (e.g., corporate bonds, bank loans) is a fraction of what it was in 2009.
  - U.S. high-yield default rate was 2.8%, as of December 2015, vs. prior cycle peak of 11.5% in November 2009.
  - Companies have exhibited stable operating performance and have benefited from relatively strong credit markets in the U.S.
- High-yield distress ratio is at its highest level since 2012, driven by weakness in energy high-yield bonds.
  - Distress ratio (percentage of high-yield bonds with spreads of 1,000bps or higher over U.S. Treasuries) was 24.5% as of December 2015, driven by a 58% distress ratio in the oil and gas sectors.
- European distressed-related investment activity is increasing.
  - Sales of non-core and non-performing loans (NPLs) by European banks are on track to reach €139bn in 2015, up 53% from 2014, according to PwC.
  - Total value of NPLs and non-core assets held by European banks is estimated to be approximately €2tn.

U.S. High-Yield Default Rate



SOURCE: S&P Ratings Direct and National Bureau of Economic Research.

U.S. High-Yield Distress Ratio



SOURCE: S&P Ratings Direct.

Private Equity Fundraising Activity

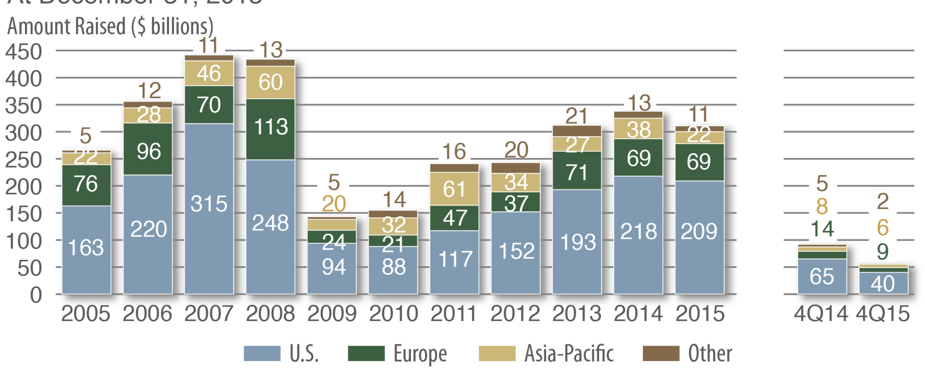
- Fundraising market remains selective overall.

- Global PE fundraising activity has improved since 2009 as a result of attractive performance industry wide and an increase in distributions and investment activity; however, the market remains highly selective.
  - Global PE fundraising activity declined by 8% in 2015 from the prior year, the first annual decline since 2009.
- Buyout fundraising activity totaled $166bn in 2015, a decrease of 7% from the prior year.
  - Large-market funds continue to drive fundraising activity: the 4-largest funds accounted for over 25% of the year's total.
- U.S. venture capital fundraising totaled $28.4bn in 2015, a 9% decline from the prior year and the first annual decline since 2009.
- Energy-focused PE funds raised $38.3bn in 2015, a record high for the sector.
  - Energy-focused funds are seeking to capitalize on the downturn in oil and natural gas prices, which has constrained the availability of financing for many energy-related companies.

Worldwide Private Equity Fundraising

By Region

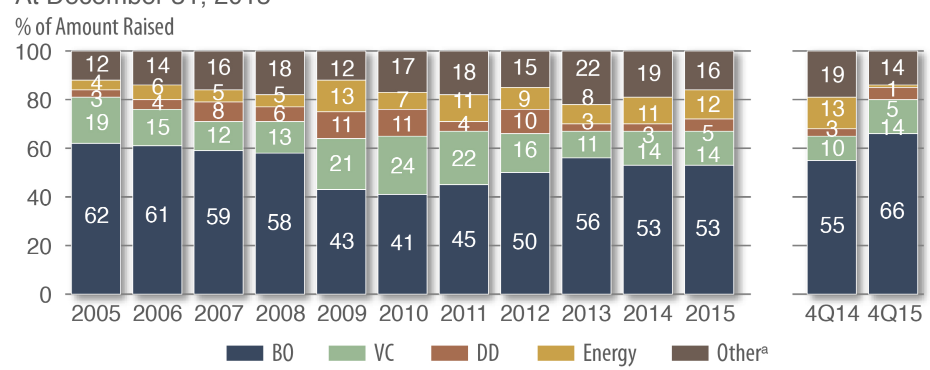
At December 31, 2015



SOURCE: Thomson Reuters.
NOTES: Fundraising amounts are based on net amounts raised, which are adjusted for fund-size reductions.
Comprises buyout, venture capital, distressed and subordinated debt, energy, infrastructure, and other fund strategies.
Data is continuously updated and is therefore subject to change.

By Strategy

At December 31, 2015



SOURCE: Thomson Reuters.
NOTES: Fundraising amounts are based on net amounts raised, which are adjusted for fund-size reductions.
Data is continuously updated and is therefore subject to change.
[a]Comprises subordinated debt, infrastructure, special situations, and other fund strategies not classified as buyout-, venture capital–, distressed debt–, or energy-focused.

Biographies

James R. Chambliss
Managing Director

Mr. Chambliss joined Pathway in 1994 and is a managing director in the California office. He is responsible for screening, analyzing, and conducting due diligence on private equity investment opportunities; negotiating and reviewing investment vehicle documents; and client servicing. Mr. Chambliss is a member of Pathway's Investment Committee and currently serves on the advisory boards and valuation committees of several private equity limited partnerships.

Mr. Chambliss received a BS in business administration, with an emphasis in finance, from Loyola Marymount University and an MBA from the University of Southern California.

Canyon J. Lew
Director

Mr. Lew joined Pathway in 2004 and is a director in the California office. Mr. Lew is responsible for investment analysis and due diligence, negotiating and reviewing investment vehicle documents, and client servicing. Additionally, Mr. Lew serves on the advisory boards of several private equity partnerships.

Prior to joining Pathway, Mr. Lew worked for Fleet Fund Investors as an associate, where he monitored investments within Fleet Bank's private equity portfolio and reviewed new investment opportunities. Mr. Lew received an AB in economics and engineering from Brown University and an MS, with high honors, in investment management from Boston University.

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No representation is being made that the Adviser will or is likely to achieve comparable performance results to that shown herein. Past performance is not necessarily indicative of future results. Although valuations of unrealized investments are made on assumptions that the Adviser believes are reasonable under the circumstances, the actual realized return on unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs, and the timing and manner of sale, all of which may differ significantly from the assumptions on which the valuations used in the data contained herein are based. Accordingly, there can be no assurance that these valuations are accurate, and the actual realized return on these investments may differ materially from the returns indicated herein.

No representation is being made that a prospective investor will or is likely to have access to funds such as the funds referenced herein. The reference to such funds was made with the benefit of hindsight based on historical rates of return of such manager and on specific investments made by such funds. Accordingly, performance results of specified funds inevitably show positive rates of return or investment results.

Allianz Global Investors

Mandate: **US Equity - ESG** **Hired: 2008**

Firm Information	Investment Approach	Total ARMB Mandate
Allianz Global Investors US LLC is a wholly-owned, indirect subsidiary of Allianz SE. Its predecessor firm, RCM Capital Management, was founded as Rosenberg Capital Management by Claude Rosenberg in 1970. As of 12/31/2015, Allianz's total assets under management were $480 billion. **Key Executives:** ***Raphael Edelman***, Director ***Melody McDonald***, Managing Director	The AllianzGI ESG portfolio is actively managed investing only in companies contained within the MSCI-USA-ESG Index. All of the companies in the strategy have passed an environmental, social and governance screening by MSCI. The portfolio is broadly diversified across all sectors of the Index and utilizes a bottom-up stock picking approach. Relative performance is derived primarily from stock selection. The investment philosophy leads the team to invest in companies that have above average top– and bottom-line growth, superior and less volatile profitability, and high barriers to entry. Allianz seeks to invest in companies whose management teams have demonstrated a wise and shareholder-friendly approach to capital allocation. Growth, quality and valuation are the key focus areas for the US ESG team to identify potential portfolio holdings. The time horizon for investment decisions is approximately 2-3 years, as demonstrated by the typically low turnover figure of ~ 40%. Individual stock weights are derived from the team's level of conviction and the potential upside for each stock. **Benchmark:** MSCI USA ESG Index	Assets Under Management: 12/31/2015: $61,359,160

Concerns: None

12/31/2015 Performance

	Last Quarter	1-Year	3-Years Annualized	5-Years Annualized
Manager (gross)	6.82%	0.38%	13.82%	10.29%
Fee	0.125%	0.50%	0.50%	0.50%
Manager (net)	6.69%	-0.12%	13.19%	9.70%
Benchmark	6.02%	-1.33%	13.44%	11.58%

Note: Returns provided by Allianz

Allianz Global Investors

Mandate: **US Large Cap Core Growth** **Hired: 1992**

Firm Information	Investment Approach	Total ARMB Mandate
Allianz Global Investors US LLC is a wholly-owned, indirect subsidiary of Allianz SE. Its predecessor firm, RCM Capital Management, was founded as Rosenberg Capital Management by Claude Rosenberg in 1970. As of 12/31/2015, Allianz's total assets under management were $480 billion. **Key Executives:** ***Raphael Edelman***, Director ***Karen Hiatt,*** Director ***Melody McDonald***, Managing Director	The US Large Cap Core Growth team utilizes a bottom-up stock picking approach. Portfolios are broadly-diversified with high active share. Relative performance is derived primarily from stock selection. The investment philosophy leads the team to invest in companies that have above average top– and bottom-line growth, superior and less volatile profitability, and high barriers to entry. Allianz seeks to invest in companies whose management teams have demonstrated a wise and shareholder-friendly approach to capital allocation. Growth, quality and valuation are the key focus areas for the US Large Cap Core Growth team to identify potential portfolio holdings. The time horizon for investment decisions is approximately 2-3 years, as demonstrated by the typically low turnover figure of ~ 40%. The US Large Cap Core Growth portfolios are typically benchmarked against the S&P 500 Index. Individual stock weights are derived from the team's level of conviction and the potential upside for each stock. **Benchmark:** S&P 500 Index	Assets Under Management: 12/31/2015: $347,481,325

Concerns: None

12/31/2015 Performance

	Last Quarter	1-Year	3-Years Annualized	5-Years Annualized
Manager (gross)	7.60%	5.92%	18.10%	13.13%
Fee	0.08%	0.31%	0.35%	0.33%
Manager (net)	7.52%	5.61%	17.75%	12.80%
Benchmark	7.04%	1.38%	15.13%	12.57%

Allianz Global Investors

ARMB -

US Large Cap Core Growth and

ESG

April 21, 2016

Raphael L. Edelman, Director, Senior Portfolio Manager, Co-CIO Large Cap Growth Equities

Melody L. McDonald, Managing Director, Senior Relationship Manager

Table of contents

Alaska Retirement Management Board

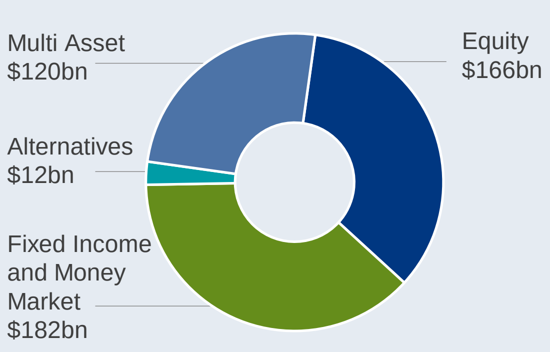
1

Allianz Global Investors Overview

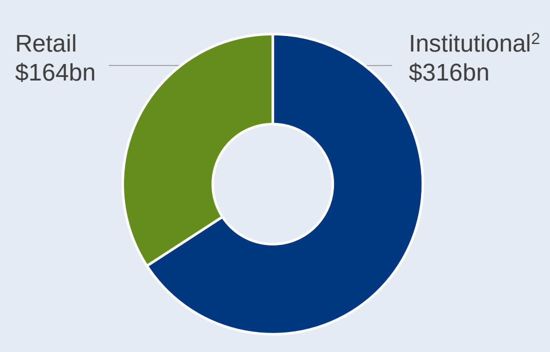
Assets under management

Total AUM: $480 billion[1]

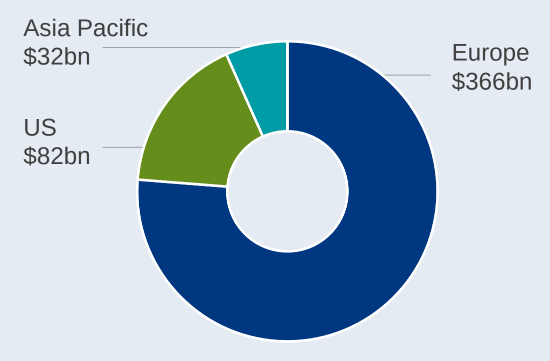
AUM by Asset Class



AUM by Client Segment



AUM by Region



1. Based on EUR to USD currency conversion rate as of December 31, 2015 ($1.0863).
2. Includes Institutional share classes of mutual funds.

Global breadth, local expertise and resources

	North America	Europe	Asia Pacific	Total
Office Locations	**4**	**13**	**8**	**25**
Relationship Managers	**136**	**234**	**151**	**521**
Investment Professionals	**126**	**323**	**109**	**558**

Note: All numbers as of December 31, 2015.

Global investment platform

Key investment capabilities

Equities	Fixed Income	Alternatives	Multi Asset	Global Solutions
▪ Fundamental – Across styles and capitalizations ▪ Global/Regional/ Emerging Markets ▪ Systematic ▪ Sector and Specialty	▪ Global Fixed Income ▪ Emerging Market Debt ▪ High Yield ▪ Convertible	▪ Options Strategies ▪ Infrastructure ▪ Volatility ▪ Equity Long/Short	▪ Dynamic Risk Mitigation ▪ Global Tactical Asset Allocation ▪ Target Date ▪ Target Risk	▪ Investment and Risk Management Advisory ▪ Portfolio Risk Analytics ▪ Asset-Liability Management ▪ Outcome Specific

Representative list of investment strategies. Not all strategies are currently available in all markets. Not all AllianzGI entities operate in all markets.

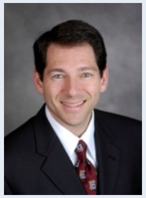
2

Investment Philosophy and Process

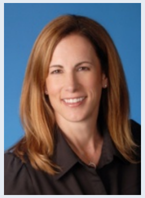
Portfolio management team

Global CIO
Steven J. Berexa, CFA 27 Years Experience
US Equity Co-CIOs
Scott Migliori, CFA 20 Years Experience
Jeffrey Parker, CFA 25 Years Experience
PMT Resources
Sector & Global Portfolios
Global Policy Council
Trading
Product Specialist
Mid Cap Team

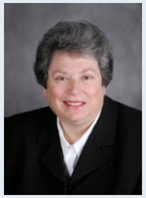
US Large Cap Core Growth Portfolio Management Team



Raphael Edelman
Lead Senior Portfolio Manager
31 Years Experience



Karen Hiatt, CFA
Senior Portfolio Manager
21 Years Experience

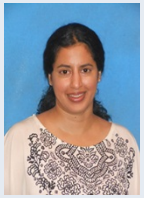


Joanne Howard, CFA
Senior Portfolio Manager
51 Years Experience

As of March 15, 2016.

Deep and experienced investment team

Fundamental Research



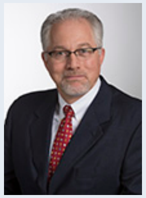
Nina Gupta, CFA
Deputy DOR
Sector Head
Financial Services
1.5 Years at AGI US
(12 Years Experience)

Sebastian Thomas, CFA
Sector Head
Technology
12 Years at AGI US
(19 Years Experience)

Raymond Cunha, CFA
Sector Head
Industrials
7 Years at AGI US
(23 Years Experience)

John Schroer, CFA
Sector Head
Healthcare
2 Years at AGI US
(25 Years Experience)

Alec Patterson, CFA
Sector Head
Consumer / Retail
25 Years at AGI US
(29 Years Experience)



Bryan Agbabian, CFA
Sector Head
Agriculture
11 Years at AGI US
(22 Years Experience)

Paul Strand, CFA
Sector Head
Resources
12 Years at AGI US
(19 Years Experience)

Grassroots℠ Research

Kelly A. Reuba
Global Head of
Grassroots℠ Research
18 Years at AGI US
(18 Years Experience)

As of March 15, 2016.

Global research headcount

	Consumer	Financial	Health Care	Industrial & Resources	Tech & Telecom & Media	ESG & Engagement	Grassroots[SM] Research	Credit	Total
Asia	2	3	1	2	3	0	1	3	**15**
Europe	4	4	3	12	5	9	2	9	**48**
Americas	3	1	3	5	6	0	2	0	**20**
Total	**9**	**8**	**7**	**19**	**14**	**9**	**5**	**12**	**83**

- An average of 15 years of industry experience
- Innovative and proprietary investment tools
- Analysts manage sector and thematic mandates
- Each analyst conducts an average of 100 meetings per year with corporate management
- Research identifies the key drivers of each stock, which frames and focuses the analytical process
- Dedicated sustainability research analysts
- Complemented by Grassroots[SM] Research

The cornerstone of our investment process—generating information advantage

Data as of March 31, 2016. Grassroots[SM] Research is a division of Allianz Global Investors that commissions investigative research for asset-management professionals. Research data used to generate Grassroots[SM] Research reports are received from reporters and Field Force investigators who work as independent, third-party research providers, supplying research that is paid for by commissions generated by trades executed on behalf of clients.

Stock example: NIKE, Inc. (NKE)

NIKE, Inc. is the world's leading innovator in athletic footwear, apparel, equipment and accessories. The company develops products for men, women, and children. Products are sold worldwide to retail stores and through its own stores, as well as subsidiaries and distributors. Wholly owned subsidiaries include Converse and Hurley..

Investment Thesis – Key Drivers

- Industry Leading Product Innovation
  - Solid pipeline of innovation should drive global industry growth and support NIKE's market share
  - Flyknit shoes launched in mid-2012 provides opportunities to drive sales and reduce costs, as manufacturing requires less labor
- Improving Profitability
  - Operating margins and ROIC should improve amid higher growth in more profitable regions
  - After a cycle of unfavorable input cost/pricing, gross margins positioned to improve
- Deeper Levels of Customer Loyalty
  - Use of technology should help NIKE increase their knowledge and the loyalty of their customers over time, allowing them to evolve products and marketing messages
    - Nike+ sensors, apps, GPS tracker products
  - Supports mid-teens EPS growth over the long term

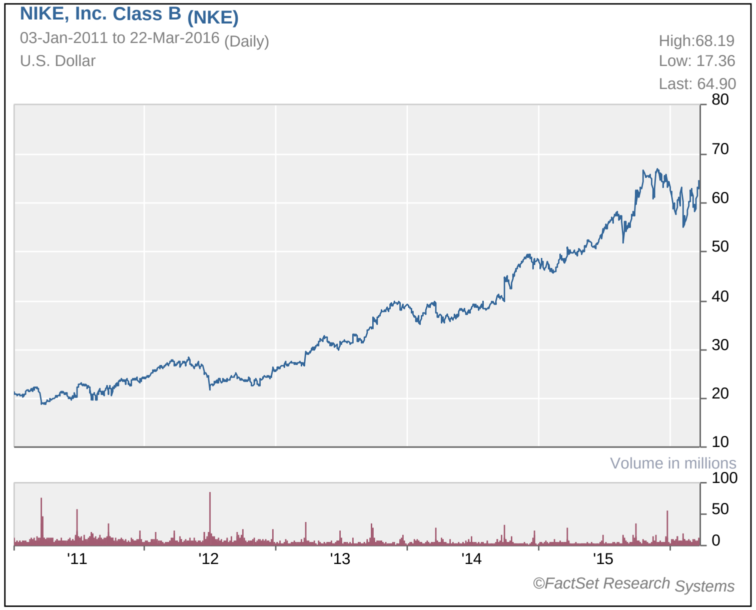
Grassroots[SM] Research Input

The company has been working with wholesale partners to better manage inventory levels in China. We commissioned several surveys of retailers and distributors of athletic shoes and apparel in China to assess progress.

- December 2015: Inventory levels continue to remain below one month's supply on average at retailers and distributors surveyed. Sixty-nine percent of respondents expect Nike to sell better than competing brands in the next six months.

- August 2015:The recent stock market declines have not affected consumer purchases of athletic shoes and apparel. Nike inventory levels remained normal due to stable sales and good inventory control at retailers and distributors surveyed. Slightly less than 60% expect Nike to sell better than competing brands in the next six months.

- December 2014: On average, current inventory levels for Nike and Adidas footwear and apparel are less than one month. Sixty percent of respondents said inventory levels for Nike are normal due to stable sales and good inventory control.



Courtney C. Sheldon, CFA
Vice President
Research Analyst

It should not be assumed that recommendations made in the future will be profitable or will equal the performance of any security presented here.

Past performance is no guarantee of future results. The information and opinions expressed here should not be considered a recommendation to purchase or sell any particular security. The information herein is intended to demonstrate AllianzGI US analyses of specific securities it holds in portfolios and does not constitute a representative list of all securities bought or sold during any time period. The price chart shown above merely shows the performance of the security over a recent period, is not indicative of the period during which AllianzGI US held the security, and should not be considered indicative of a pattern of success or a guarantee of positive performance. Not all buy/sell decisions made by AllianzGI US resulted in profitable outcomes. Upon request, a list of all AllianzGI US recommendations is available for the immediately preceding one-year period or from the time of the earliest recommendation discussed, whichever is longer. The market price as of March 22, 2016 for NKE was US$64.90.

Grassroots[SM] Research is a division of Allianz Global Investors that commissions investigative research for asset-management professionals. Research data used to generate Grassroots[SM] Research reports are received from Reporters and Field Force Investigators who work as independent, third-party research providers, supplying research that is paid for by commissions generated by trades executed on behalf of clients.

Grassroots^{SM} Research* studies – Large Cap

Consumer

- 2016 Corporate Travel Spending Outlook in the US
- AT&T Unlimited Data Bundle Survey in the US
- CARQUEST Stores and Franchises in the US
- Chipotle Mexican Grill Sales Trend in the US
- Chipotle Mexican Grill Survey in the US
- Cruise Booking Trends in the US and Europe
- Cruise Booking Trends in the US and Europe
- Farm and Ranch Retail Trends in Texas
- Global Market Potential for Corning Gorilla Glass for Automotive
- Leisure Travel Bookings in the US and Europe
- lululemon Survey in the US
- Mall Operators in the US
- Nike in China
- PUMA Shoes in the US
- PUMA Sportswear in Germany
- Self-Driving Car Technology Survey in the US
- ULTA Survey in the US

Energy

- Oil Production Trends for Stripper Wells in the US

Financials

- Impact of New Digital Technologies on the Private-Wealth Management Industry in the US
- Robo-Advisor Survey Among Investors in the US

Healthcare

- Abiomed's Impella Ventricular Assist Devices in the US
- Genmab/Johnson & Johnson's Multiple Myeloma Drug Darzalex in the US
- Insulin Pumps in the US

Technology

- Global PC Demand
- Global PC Demand
- Global Wearable Fitness Device Demand
- iPhone Replacement Cycle and Lease Interest Survey in the US
- iPhone Replacement Cycle in the US
- Smartphone Survey in China
- Smartphone Survey in China
- Wearable Fitness Device Consumer Survey in the US and China
- Yelp Advertisers in the US

Materials

- Coal and Steel Market in China

(Studies undertaken during the first quarter 2016)
The information provided in this report should not be considered a recommendation to purchase or sell any particular security or strategy.
*Grassroots^{SM} Research is a division of Allianz Global Investors that commissions investigative research for asset-management professionals. Research data used to generate Grassroots^{SM} Research reports are received from reporters and Field Force investigators who work as independent, third-party research providers, supplying research that is paid for by commissions generated by trades executed on behalf of clients.

AllianzGI US Large Cap Core investment process

Goal: To deliver significant excess returns by investing in high quality growth companies

Idea Generation	Stock Selection	Portfolio Construction	Implementation/Monitoring and Review
▪ Approximately 700 companies ▪ AllianzGI US Fundamental Research ▪ Grassroots^{SM} Research ▪ Sector Funds and Mid Cap Teams ▪ Global Policy Council ▪ Street research	▪ Culled down to approximately 150 – 200 candidates ▪ Stocks must meet rigorous Growth, Quality, and Valuation criteria ▪ Identify catalysts, e.g., new product launch, improving cost structure	▪ Team managed ▪ Minimum initial position: 1% ▪ Maximum position: 10% ▪ Weightings driven by absolute return potential	▪ Team acts quickly if investment case weakens ▪ Daily meetings with Research Analysts ▪ Weekly review of under-performing stocks ▪ Quarterly review with Global CIO ▪ RIMS Express, Northfield, APT

Alpha Potential

The number of securities referenced above represent the typical number of stocks researched at each stage of the investment process. During any given stage of the investment process the selection criteria may vary from those shown above. The diagrams and statements above reflect the typical investment process applied to this strategy. At any given time other criteria may affect the investment process. See additional disclosure at the end of this presentation.

3

ARMB – Large Cap Core Growth

ARMB – Large Cap Core Growth

Performance review

As of March 31, 2016

	Assets Under Management
ARMB – Large Cap Core Growth	$343,785,769

Annualized Performance (%)							
Inception Date: June 30, 1995	First Quarter 2016	1 Year	3 Year	5 Year	7 Year	10 Year	Since Inception
ARMB – Large Cap Core Growth	**-0.92**	**0.29**	**14.49**	**11.62**	**16.42**	**7.71**	**9.65**
S&P 500 Index	1.35	1.78	11.82	11.58	16.97	7.01	8.65
Russell 1000 Growth Index	0.74	2.52	13.61	12.38	17.94	8.28	8.06

See additional disclosure; Source: Allianz Global Investors.

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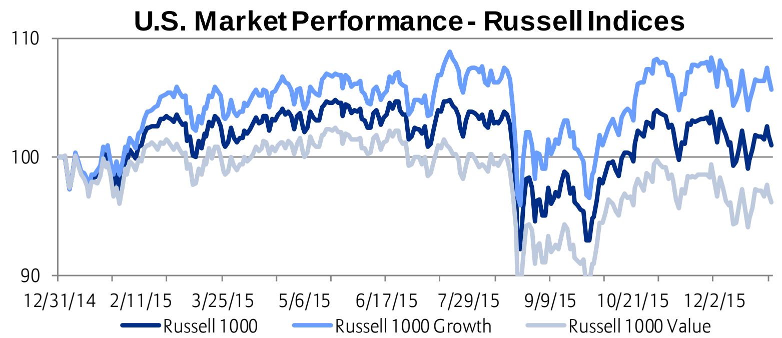
U.S. Market overview: First Quarter 2016

U.S. Key Economic Indicators	Mar-16	Dec-15	Sep-15	Jun-15
Real GDP Growth (%q/q, saar)	2.2	1.4	2.0	3.9
Civilian Unemployment Rate (%)	5.0	5.0	5.1	5.3
Initial Unemployment Claims (Thous., 4wk MA)	263	277	273	275
Housing Starts (Thous. of Units, saar)	1178	1159	1207	1211
New Home Sales (Thous. of Units, saar)	512	540	457	469
CPI (%y/y, nsa)	1.0	0.7	0.0	0.1
PPI (%y/y, nsa)	1.1	1.3	2.1	0.7
ISM Manufacturing Report	51.8	48.0	50.0	53.5
Industrial Production (%y/y)	-1.0	-1.7	0.8	0.9

Source: AllianzGI US, FactSet



Source: AllianzGI US, Russell

What Happened in the Market?

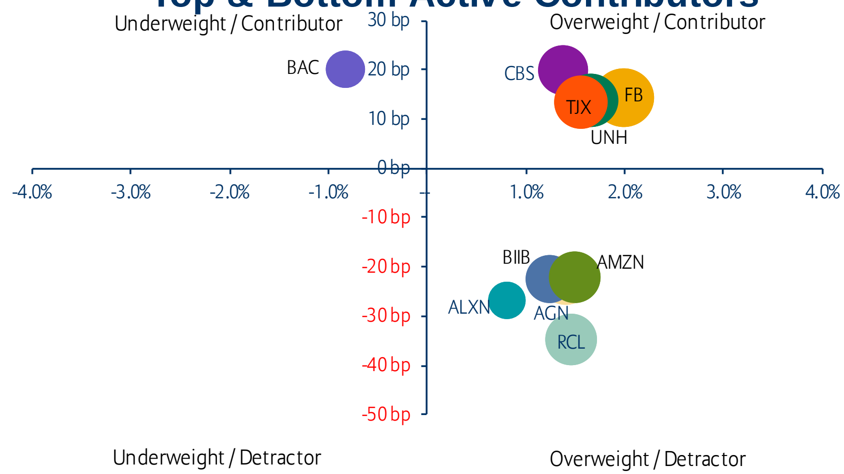
- Equities briefly fell into bear market territory in the first half of the quarter before rallying in the second half. Positive employment and consumer spending data eased fears of a US recession. The Russell 1000 Growth Index rose 0.74%, and the S&P 500 Index gained 1.35%.
- Banks plunged in the two indices during the period as investors anticipate ultra-low interest rate policies in the US and abroad might remain in place for longer than originally expected.
- As recently as December, policymakers thought economic conditions would be sufficiently robust to warrant four interest rate hikes in 2016. However, optimism is fading, and uncertainty has increased along with “downside risks to the outlook”. The Fed’s more dovish comments in March lowered expectations for the number of rate hikes in 2016.
- US equities rallied strongly over March, as higher oil prices, better-than-expected economic news and a more dovish tone from the Federal Reserve (Fed) lifted investor sentiment.
- The final estimate of US economic activity in the fourth quarter of 2015 was revised up to an annualized rate of 1.4%. Employment also remained strong, with 242,000 jobs added in February, and data for the previous two months was revised up by 50,000. However, retail sales were weak and core inflation, which excludes food and energy, rose to 2.3%. This is its highest level since September 2008 and above the Fed’s official target of 2%.
- Risks have risen, but we do not believe the global economy is heading toward recession. In the US, we think growth should be strong enough in 2016 for the Fed to eventually continue raising interest rates.

Attribution performance summary: First Quarter 2016

Top 5 Active Contributors		Average Weight Port	Bmk	Rel	Stock Return	Active Contrib
BAC	Bank of America Corporation	--	.8%	-.8%	-19%	**20 bp**
CBS	CBS Corporation Class B	1.5%	.1%	1.4%	17%	**20 bp**
FB	Facebook, Inc. Class A	3.4%	1.4%	2.0%	9%	**14 bp**
UNH	UnitedHealth Group Inc.	2.3%	.7%	1.7%	10%	**14 bp**
TJX	TJX Companies, Inc.	1.8%	.3%	1.6%	11%	**14 bp**

Bottom 5 Active Contributors		Average Weight Port	Bmk	Rel	Stock Return	Active Contrib
RCL	Royal Caribbean Cruises Ltd.	1.5%	.1%	1.5%	-18%	**-35 bp**
ALXN	Alexion Pharmaceuticals, Inc.	1.0%	.2%	.8%	-27%	**-27 bp**
AGN	Allergan plc	2.1%	.7%	1.4%	-14%	**-23 bp**
BIIB	Biogen Inc.	1.6%	.3%	1.2%	-15%	**-22 bp**
AMZN	Amazon.com, Inc.	2.8%	1.3%	1.5%	-12%	**-22 bp**

Top & Bottom Active Contributors



Portfolio Impact and Action

- Not owning benchmark holding Bank of America contributed to relative performance during the period. The negative sentiment for banks derives from fewer expected Fed rate hikes this year due to concerns about the health of the global economy, and lower oil prices have led to energy credit fears.

- Facebook rallied due to continued strength in revenue growth and expanding margins – despite strong currency headwinds. Monetization is accelerating as advertisers continue to shift ad dollars to Facebook's platforms. We remain positive on the long term growth prospects for the company given solid execution and multiple services that have yet to be monetized.

- TJX Companies has been a major beneficiary of off-price retailers taking share from department and specialty stores. The stock outperformed as the company reported impressive earnings results in a tougher retail environment. We believe the company has substantial competitive advantages given their multiple global buying offices and the ability to work with many vendors, which helps control input costs.

- Royal Caribbean Cruises declined as low fuel costs have not been enough to offset the company's exposure to currencies that have fallen against the dollar. While cruise lines have faced temporary headwinds, we believe Royal Caribbean remains well positioned within the cruise industry. The company's competitive advantages should drive attractive long-term growth.

- Alexion Pharmaceuticals underperformed along with the overall biotech sector. Alexion specifically has larger than average international exposure and faces more foreign exchange headwinds. Longer-term, we expect attractive growth for the company's marketed products and successful launches for new products. In early February, the company reported very strong sales results despite currency headwinds.

- Amazon.com also detracted from performance as the stock gave back some of its recent gains. Amazon.com is a strong share gainer against offline retail and online retail competitors. The company is also well positioned to capitalize on the secular trends of cloud computing and digital media initiatives. While recent sentiment has shifted to favor more defensive stocks, we believe the long-term growth prospects remain very favorable for the company.

Characteristics

ARMB - Large Cap Core Growth

As of March 31, 2016

Characteristics	Portfolio	S&P 500 Index	Russell 1000 Growth Index
Number of Holdings	61	500	635
Cash	1.7%	0.0%	0.0%
Yield	1.5%	2.2%	1.7%
Market Cap (wtd. avg) (B)	$149.8	$139.9	$140.2
Wtd Median Market Cap (B)	$92.4	$78.2	$69.2
Earnings Per Share Growth			
Last 3 Years	11.1%	7.5%	11.2%
Last 12 Months	10.3	-2.2	11.6
Next 12 Months	4.5	0.5	3.8
Next 3-5 Years	14.3	10.1	13.6
Portfolio P/E			
Last 12 Months	19.3x	17.6x	20.0x
Next 12 Months	18.4	17.6	19.3
P/E to Long Term Growth	1.29	1.74	1.42

Top 10 Holdings	Portfolio Weights (%)	S&P 500 Weights (%)	Russell 1000 Growth Weights (%)
APPLE INC	4.5	3.4	6.0
MICROSOFT CORP	3.7	2.4	2.4
FACEBOOK INC	3.4	1.5	2.3
VISA INC	3.0	0.8	1.4
AMAZON.COM INC	2.7	1.3	2.2
CVS HEALTH CORP	2.4	0.6	1.0
UNITEDHEALTH GROUP INC	2.4	0.7	1.1
CISCO SYSTEMS INC	2.3	0.8	0.0
STARBUCKS CORP	2.2	0.5	0.9
ALPHABET INC	2.2	1.2	2.1
Total	**28.8**	**13.2**	**19.3**

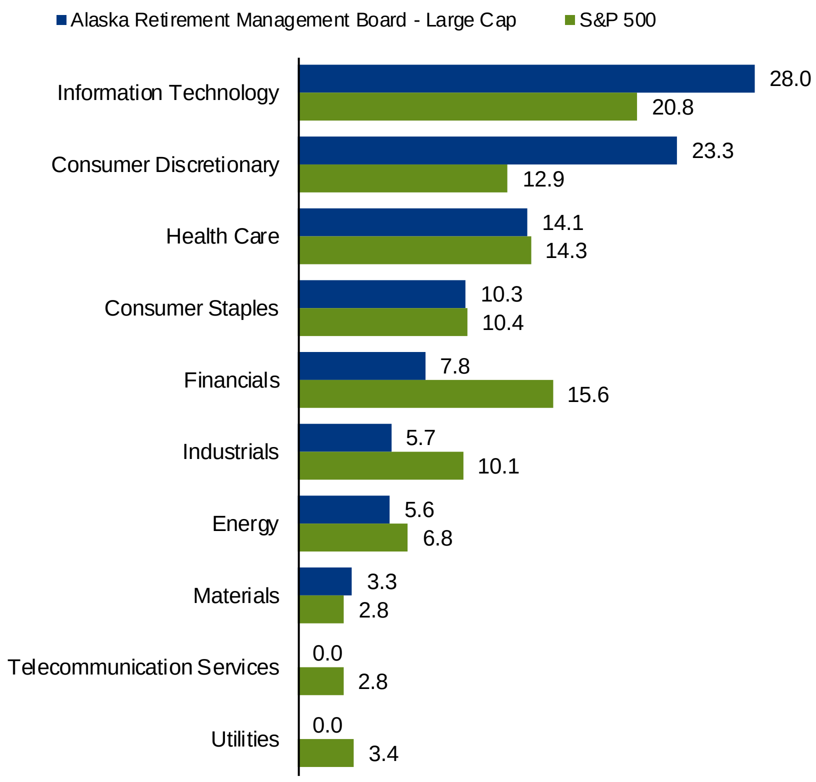
See additional disclosure; Source: Allianz Global Investors

Weightings

ARMB - Large Cap Core Growth

As of March 31, 2016

Top Sector Weightings (%)



See additional disclosure; Source: Allianz Global Investors

Significant buys/sells

ARMB - Large Cap Core Growth

First Quarter 2016

Sector	Buys	Additions > 0.25%	Sells	Trims > 0.25%
ENERGY	PIONEER NATURAL RESOURCES			VALERO ENERGY CORP
INDUSTRIALS				AMETEK INC UNION PACIFIC CORP
CONSUMER DISCRETIONARY			WILLIAMS-SONOMA INC	
CONSUMER STAPLES	CONSTELLATION BRANDS INC			
HEALTH CARE	EDWARDS LIFESCIENCES CORP	ALEXION PHARMACEUTICALS INC	EXPRESS SCRIPTS HOLDING CO ST JUDE MEDICAL INC	
INFORMATION TECHNOLOGY	ACTIVISION BLIZZARD INC			FACEBOOK INC NXP SEMICONDUCTORS NV

Allianz Global Investors

Holdings by sector/industry

ARMB - Large Cap Core Growth

As of March 31, 2016

Description	Pct of Total
ENERGY	5.64
ENERGY EQUIPMENT/SERVICES	**1.13**
SCHLUMBERGER LTD	1.13
OIL,GAS & CONSUMABLE FUELS	**4.51**
EOG RESOURCES INC	1.07
EXXON MOBIL CORP	1.98
PIONEER NATURAL RESOURCES CO	1.06
VALERO ENERGY CORP	0.39
MATERIALS	3.34
CHEMICALS	**2.23**
DOW CHEMICAL CO/THE	1.12
ECOLAB INC	1.11
CONSTRUCTION MATERIALS	**1.12**
VULCAN MATERIALS CO	1.12
INDUSTRIALS	5.72
AEROSPACE/DEFENCE	**1.41**
LOCKHEED MARTIN CORP	1.41
ELECTRICAL EQUIPMENT	**1.01**
AMETEK INC	1.01
INDUSTRIAL CONGLOMERATES	**1.35**
DANAHER CORP	1.35
AIRLINES	**1.00**
UNITED CONTINENTAL HOLDINGS INC	1.00

Description	Pct of Total
ROAD/RAIL	**0.96**
UNION PACIFIC CORP	0.96
CONSUMER DISCRETIONARY	23.28
AUTO COMPONENTS	**1.34**
DELPHI AUTOMOTIVE PLC	1.34
HOUSEHOLD DURABLES	**1.26**
MOHAWK INDUSTRIES INC	1.26
TEXTILES APPAREL & LUXURY GOODS	**1.55**
NIKE INC CL B	1.55
HOTELS RESTAURANTS/LEISURE	**5.22**
MCDONALD'S CORP	1.47
ROYAL CARIBBEAN CRUISES LTD	1.53
STARBUCKS CORP	2.22
MEDIA	**4.48**
CBS CORP CL B	1.62
COMCAST CORP CL A	1.83
TIME WARNER INC	1.03
INTERNET/CATALOG RETAIL	**4.09**
AMAZON.COM INC	2.75
PRICELINE GROUP INC/THE	1.34
MULTILINE RETAIL	**1.78**
DOLLAR TREE INC	1.78
SPECIALTY RETAIL	**3.56**
TJX COS INC/THE	1.89

Description	Pct of Total
TRACTOR SUPPLY CO	1.67
CONSUMER STAPLES	10.33
FOOD & STAPLES RETAILING	**3.98**
COSTCO WHOLESALE CORP	1.54
CVS HEALTH CORP	2.43
BEVERAGES	**5.03**
CONSTELLATION BRANDS INC CL A	1.27
MONSTER BEVERAGE CORP	1.65
PEPSICO INC	2.11
HOUSEHOLD PRODUCTS	**1.32**
COLGATE-PALMOLIVE CO	1.32
HEALTH CARE	14.08
HEALTH CARE EQUIP/SUPPLIES	**1.18**
EDWARDS LIFESCIENCES CORP	1.18
HEALTH CARE PROVIDERS/SERVICES	**2.40**
UNITEDHEALTH GROUP INC	2.40
BIOTECHNOLOGY	**5.99**
ABBVIE INC	1.38
ALEXION PHARMACEUTICALS INC	1.03
BIOGEN INC	1.48
CELGENE CORP	0.90
GILEAD SCIENCES INC	1.20
PHARMACEUTICALS	**4.52**

Allianz Global Investors

Holdings by sector/industry – cont.

ARMB - Large Cap Core Growth

As of March 31, 2016

Description	Pct of Total
ALLERGAN PLC	1.83
MERCK & CO INC	1.02
PFIZER INC	1.67
FINANCIALS	7.82
BANKS	**5.92**
CITIGROUP INC	1.12
JPMORGAN CHASE & CO	1.94
US BANCORP	1.47
WELLS FARGO & CO	1.40
DIVERSIFIED FINANCIAL SERVICES	**1.90**
CME GROUP INC/IL	1.90
INFORMATION TECHNOLOGY	28.04
INTERNET SOFTWARE/SERVICES	**6.13**
ALIBABA GROUP HOLDING LTD ADR	0.59
ALPHABET INC CL A	2.16
FACEBOOK INC CL A	3.38
IT SERVICES	**4.28**
ACCENTURE PLC CL A	1.25
VISA INC	3.03
SOFTWARE	**6.69**
ACTIVISION BLIZZARD INC	1.31
MICROSOFT CORP	3.66
SALESFORCE.COM INC	1.71

Description	Pct of Total
COMMUNICATIONS EQUIPMENT	**2.31**
CISCO SYSTEMS INC	2.31
TECHNOLOGY HARDWARE, STORAGE & PERIPHERALS	**4.50**
APPLE INC	4.50
SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT	**4.13**
BROADCOM LTD	1.44
INTEL CORP	1.64
NXP SEMICONDUCTORS NV	1.05
Cash	1.68

4

ARMB DC Plan - ESG

Performance review

ARMB DC Plan - ESG

As of March 31, 2016

	Assets Under Management
ARMB DC Plan - ESG	$59,432,985

Annualized Performance (%)						
Inception Date: October 30, 2008	First Quarter 2016	1 Year	3 Year	5 Year	7 Year	Since Inception
ARMB DC Plan - ESG	**-0.56**	**-1.41**	**9.65**	**8.94**	**14.90**	**11.67**
ARMB ESG Custom Benchmark*	1.93	-0.04	10.39	10.72	16.33	12.80

*The ARMB ESG Custom Benchmark is a linked benchmark consisting of the S&P 500 Index from inception 10/30/2008, through 9/30/2013, and the MSCI USA ESG Index from 10/1/2013 forward.

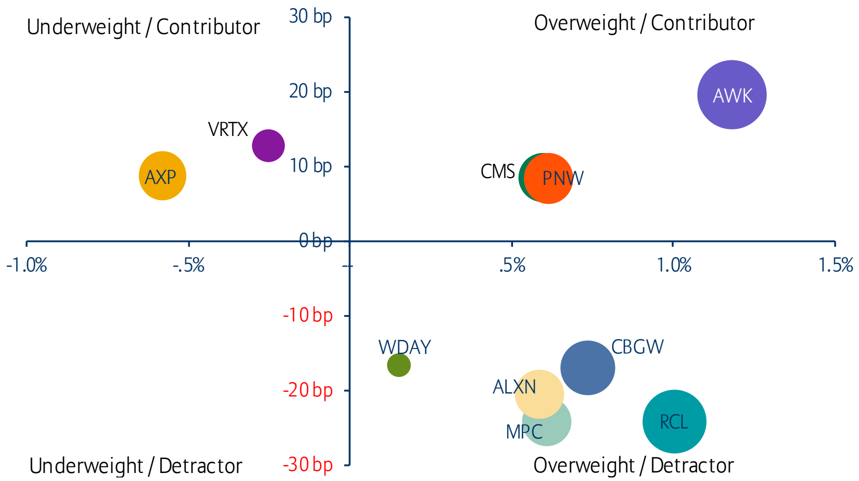
See additional disclosure; Source: Allianz Global Investors

Attribution performance summary: First Quarter 2016

Top 5 Active Contributors		Average Weight Port	Bmk	Rel	Stock Return	Active Contrib
AWK	American Water Works Compa	1.3%	.1%	1.2%	16%	**20 bp**
VRTX	Vertex Pharmaceuticals Incorp	--	.3%	-.3%	-37%	**13 bp**
AXP	American Express Company	--	.6%	-.6%	-11%	**9 bp**
CMS	CMS Energy Corporation	.7%	.1%	.6%	19%	**8 bp**
PNW	Pinnacle West Capital Corporat	.7%	.1%	.6%	18%	**8 bp**

Bottom 5 Active Contributors		Average Weight Port	Bmk	Rel	Stock Return	Active Contrib
MPC	Marathon Petroleum Corporatio	.8%	.2%	.6%	-28%	**-24 bp**
RCL	Royal Caribbean Cruises Ltd.	1.2%	.2%	1.0%	-18%	**-24 bp**
ALXN	Alexion Pharmaceuticals, Inc.	1.0%	.4%	.6%	-27%	**-20 bp**
CBGW	CBRE Group, Inc. Class A	.8%	.1%	.7%	-17%	**-17 bp**
WDAY	Workday, Inc. Class A	.2%	.1%	.2%	-4%	**-17 bp**

Top & Bottom Active Contributors



Portfolio Impact and Action

- American Water Works is the largest US investor-owned regulated water utility. The company is growing rapidly both organically and via several acquisitions. Water scarcity, drought, and aging infrastructure are creating growth opportunities. Shares rallied after the stock was added to the S&P 500 Index in early March.
- CMS Energy rose after the company's earnings topped expectations and it raised its 2016 earnings outlook. Management also raised its 10-year capex plan by $1.5 billion, which is expected to boost the company's long-term growth rate.
- Shares in Pinnacle West Capital rose as the company closed out 2015 with strong cost controls driving earnings to the upper end of its guidance range. Management reported higher retail sales growth as well as the elimination of equity needs due to bonus depreciation. The company does not believe it will need to raise equity through the end of the decade.
- Marathon Petroleum declined after quarterly sales missed expectations and it cut its payout guidance. The company, along with the oil and gas group, is struggling with persistently low commodity prices. Management said its distribution growth rate continues to be among the highest for large cap diversified MLPs.
- Royal Caribbean Cruises declined as low fuel costs have not been enough to offset the company's exposure to currencies that have fallen against the dollar. While cruise lines have faced temporary headwinds, we believe Royal Caribbean remains well positioned within the cruise industry. The company's competitive advantages should drive attractive long-term growth.
- Alexion Pharmaceuticals underperformed along with the overall biotech sector. Alexion specifically has larger than average international exposure and faces more foreign exchange headwinds. Longer-term, we expect attractive growth for the company's marketed products and successful launches for new products. In early February, the company reported very strong sales results despite currency headwinds.

Characteristics

ARMB DC Plan - ESG

As of March 31, 2016

Characteristics	Portfolio	MSCI USA ESG Index
Number of Holdings	79	344
Cash	0.8%	0.0%
Yield	1.8%	2.2%
Market Cap (wtd. avg) (B)	$108.6	$100.0
Wtd Median Market Cap (B)	$65.4	$53.8
Earnings Per Share Growth		
Last 3 Years	8.7%	6.7%
Last 12 Months	0.1	-4.0
Next 12 Months	1.0	-1.6
Next 3-5 Years	12.1	9.9
Portfolio P/E		
Last 12 Months	20.2x	18.4x
Next 12 Months	20.0	18.7
P/E to Long Term Growth	1.65	1.89

Top 10 Holdings	Portfolio Weights (%)	Benchmark Weights (%)
ALPHABET INC	4.5	2.4
JOHNSON & JOHNSON	3.0	3.2
PEPSICO INC	2.6	1.6
CISCO SYSTEMS INC	2.5	1.5
MERCK & CO INC	2.5	1.6
INTEL CORP	2.5	1.6
MCDONALD'S CORP	2.4	1.2
WALT DISNEY CO/THE	2.4	1.7
BERKSHIRE HATHAWAY INC	2.2	1.8
STARBUCKS CORP	2.1	0.9
Total	**26.7**	**17.5**

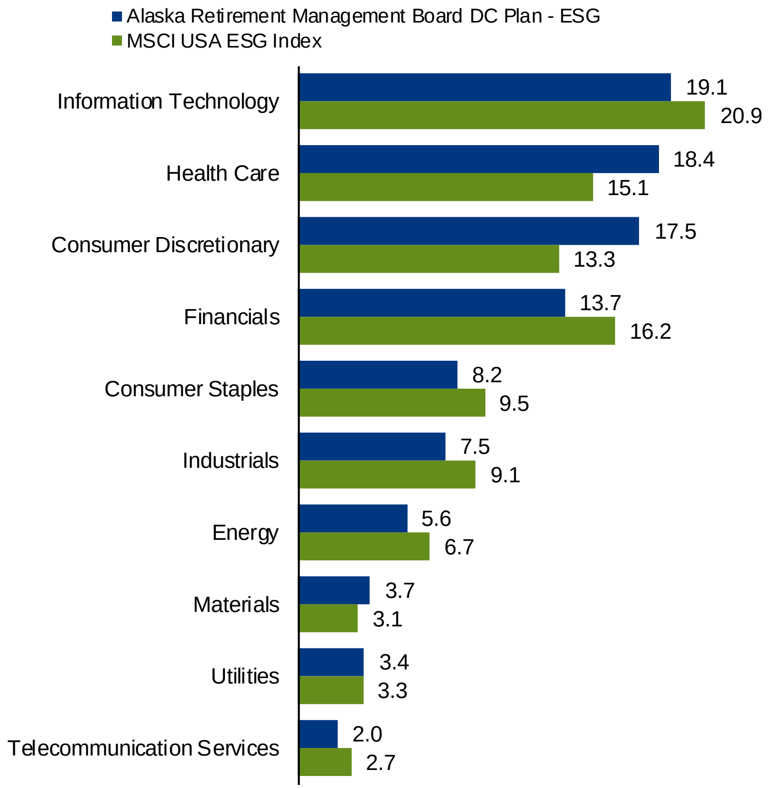
See additional disclosure; Source: Allianz Global Investors

Weightings

ARMB DC Plan - ESG

As of March 31, 2016

Top Sector Weightings (%)



See additional disclosure; Source: Allianz Global Investors

Significant buys/sells

ARMB DC Plan - ESG

First Quarter 2016

Sector	Buys	Additions > 0.25%	Sells	Trims > 0.25%
ENERGY		EOG RESOURCES INC	CALIFORNIA RESOURCES CORP	
INDUSTRIALS				AMETEK INC UNION PACIFIC CORP
CONSUMER STAPLES	KROGER CO/THE		EDGEWELL PERSONAL CARE CO	
HEALTH CARE		JOHNSON & JOHNSON		CIGNA CORP
FINANCIALS	INTERCONTINENTAL EXCHANGE		DISCOVER FINANCIAL SERVICES STATE STREET CORP	BERKSHIRE HATHAWAY INC
INFORMATION TECHNOLOGY	ALPHABET (CLASS C) CORNING INC INTERNATIONAL BUSINESS MACHINES CORP LAM RESEARCH CORP	ACCENTURE PLC	HP INC SKYWORKS SOLUTIONS INC WORKDAY INC	ALPHABET INC (CLASS A) CISCO SYSTEMS INC
TELECOMMUNICATION SERVICES		VERIZON COMMUNICATIONS INC		

Holdings by sector/industry

ARMB DC Plan - ESG

As of March 31, 2016

Description	Pct of Total
ENERGY	5.57
ENERGY EQUIPMENT/SERVICES	**0.67**
BAKER HUGHES INC	0.67
OIL,GAS & CONSUMABLE FUELS	**4.90**
CONOCOPHILLIPS	0.88
EOG RESOURCES INC	1.18
MARATHON PETROLEUM CORP	0.65
OCCIDENTAL PETROLEUM CORP	0.90
PIONEER NATURAL RESOURCES CO	0.75
RANGE RESOURCES CORP	0.55
MATERIALS	3.71
CHEMICALS	**2.98**
ECOLAB INC	0.84
INTERNATIONAL FLAVORS & FRAGRANCES INC	0.57
LYONDELLBASELL INDUSTRIES NV CL A	0.79
SHERWIN-WILLIAMS CO/THE	0.78
CONTAINERS/PACKAGING	**0.73**
SEALED AIR CORP	0.73
INDUSTRIALS	7.55
ELECTRICAL EQUIPMENT	**0.60**
AMETEK INC	0.60
INDUSTRIAL CONGLOMERATES	**3.53**
3M CO	1.99

Description	Pct of Total
DANAHER CORP	1.55
MACHINERY	**0.99**
INGERSOLL-RAND PLC	0.99
PROFESSIONAL SERVICES	**0.51**
ROBERT HALF INTERNATIONAL INC	0.51
AIRLINES	**0.79**
SOUTHWEST AIRLINES CO	0.79
ROAD/RAIL	**1.12**
UNION PACIFIC CORP	1.12
CONSUMER DISCRETIONARY	17.50
AUTO COMPONENTS	**1.05**
DELPHI AUTOMOTIVE PLC	1.05
AUTOMOBILES	**0.78**
TESLA MOTORS INC	0.78
HOUSEHOLD DURABLES	**0.94**
MOHAWK INDUSTRIES INC	0.94
TEXTILES APPAREL & LUXURY GOODS	**1.76**
NIKE INC CL B	1.76
HOTELS RESTAURANTS/LEISURE	**5.68**
MCDONALD'S CORP	2.41
ROYAL CARIBBEAN CRUISES LTD	1.16
STARBUCKS CORP	2.11
MEDIA	**3.44**
TIME WARNER INC	1.05

Description	Pct of Total
WALT DISNEY CO/THE	2.39
SPECIALTY RETAIL	**3.85**
LOWE'S COS INC	1.88
TRACTOR SUPPLY CO	1.09
ULTA SALON COSMETICS & FRAGRANCE INC	0.87
CONSUMER STAPLES	8.16
FOOD & STAPLES RETAILING	**1.14**
KROGER CO/THE	1.14
BEVERAGES	**2.59**
PEPSICO INC	2.59
FOOD PRODUCTS	**2.24**
MONDELEZ INTERNATIONAL INC CL A	1.37
WHITEWAVE FOODS CO/THE	0.87
HOUSEHOLD PRODUCTS	**1.34**
COLGATE-PALMOLIVE CO	1.34
PERSONAL PRODUCTS	**0.86**
ESTEE LAUDER COS INC/THE CL A	0.86
HEALTH CARE	18.44
HEALTH CARE EQUIP/SUPPLIES	**1.88**
BECTON DICKINSON AND CO	0.70
EDWARDS LIFESCIENCES CORP	1.18
HEALTH CARE PROVIDERS/SERVICES	**2.42**
ANTHEM INC	1.15

Allianz Global Investors

Holdings by sector/industry – cont.

ARMB DC Plan - ESG
As of March 31, 2016

Description	Pct of Total
CIGNA CORP	0.49
LABORATORY CORP OF AMERICA HOLDINGS	0.78
BIOTECHNOLOGY	**6.60**
ALEXION PHARMACEUTICALS INC	0.87
AMGEN INC	1.59
BIOGEN INC	1.10
CELGENE CORP	1.41
GILEAD SCIENCES INC	1.63
PHARMACEUTICALS	**7.53**
BRISTOL-MYERS SQUIBB CO	2.07
JOHNSON & JOHNSON	2.99
MERCK & CO INC	2.47
FINANCIALS	13.66
BANKS	**1.90**
US BANCORP	1.90
DIVERSIFIED FINANCIAL SERVICES	**4.13**
BERKSHIRE HATHAWAY INC CL B	2.19
CME GROUP INC/IL	1.07
INTERCONTINENTAL EXCHANGE INC	0.87
CAPITAL MARKETS	**2.58**
BLACKROCK INC	1.23
CHARLES SCHWAB CORP/THE	0.93
INVESCO LTD	0.42
INSURANCE	**1.16**

Description	Pct of Total
TRAVELERS COS INC/THE	1.16
REAL ESTATE INVESTMENT TRUSTS (REITS)	**3.09**
AMERICAN TOWER CORP REIT	1.16
EQUINIX INC	1.00
SIMON PROPERTY GROUP INC REIT	0.93
REAL ESTATE MANAGEMENT & DEVELOPMENT	**0.79**
CBRE GROUP INC CL A	0.79
INFORMATION TECHNOLOGY	19.09
INTERNET SOFTWARE/SERVICES	**6.13**
ALPHABET INC CL C	0.96
ALPHABET INC CL A	4.52
YAHOO! INC	0.65
IT SERVICES	**5.80**
ACCENTURE PLC CL A	1.62
COGNIZANT TECHNOLOGY SOLUTIONS CORP CL A	1.32
INTERNATIONAL BUSINESS MACHINES CORP	1.05
MASTERCARD INC CL A	1.80
SOFTWARE	**1.28**
SALESFORCE.COM INC	1.28
COMMUNICATIONS EQUIPMENT	**2.54**
CISCO SYSTEMS INC	2.54

Description	Pct of Total
ELECTRONIC EQUIPMENT, INSTRUMENTS & COMPONENTS	0.35
CORNING INC	0.35
SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT	2.99
INTEL CORP	2.46
LAM RESEARCH CORP	0.53
TELECOMMUNICATION SERVICES	2.04
SERVICES	**2.04**
VERIZON COMMUNICATIONS INC	2.04
UTILITIES	3.41
ELECTRIC UTILITIES	**1.54**
EVERSOURCE ENERGY	0.80
PINNACLE WEST CAPITAL CORP	0.74
MULTI-UTILITIES	**0.75**
CMS ENERGY CORP	0.75
WATER UTILITIES	**1.12**

Allianz Global Investors

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Appendix

US equity market outlook

Q2 2016

Factors	Effects on stock market returns			Recent observations and one year out expectations
	Positive	Neutral	Negative	
Corporate Profits		●		Profit margins should improve as final product price inflation accelerates. Corporate reinvestment rates have remained low, leaving secular productivity growth low, but a mild revival in growth should allow some room for a cyclical improvement in productivity during 2016. S&P 500 EPS are likely to be up modestly as weaker energy earnings will continue to dampen reported profits. Analyst earnings expectations began stabilizing late in Q1 2016 after sharp downward revisions for most of 2015.
Pricing/ Inflation		←●		Core consumer price inflation picked up late in 2015, and is likely to lift to the 2.75-3% range over the next 12 months. Rent and health are leading the lift in the core CPI, while headline inflation is rising on the rebound in oil prices. Despite a decline in the unemployment rate below 5% in 2016, wage growth is only mildly accelerating, although small businesses anticipate greater challenges ahead with minimum wage hikes. A dollar depreciation could help lift import prices, and allow more domestic pricing power for US producers of tradable goods.
Interest Rates	●→			The Fed has hesitated to follow up on the December 2015 rate hike despite the reacceleration of inflation. Normalizing policy rates is important for the Fed, as they would prefer not to use quantitative easing measures in the future. Slow US business revenue growth and weak foreign growth, however, are encouraging the Fed to pursue a shallower, more drawn out tightening than they originally expected. 10-year US Treasury yields should end 2016 near 2.25%, while a mild improvement in profits, along with a revival in oil prices, should favor further tightening of corporate bonds spreads.
Economic Activity		←●		Real GDP growth in the 1.75–2% range is likely over the next 12 months. Real consumer spending growth in the 2.5-3% range is achievable as payroll employment gains remain above 200,000 per month, and wages show mild acceleration. Nondefense capital goods orders are likely to continue their slow rebound as the bulk of the energy price adjustment gets completed, and as profit growth picks up. Export growth should also return with Eurozone growth and emerging market stabilization.
International		●→		The ECB remains committed to expanding its balance sheet as many Eurozone nations are still caught in mild deflation. Bank lending appears to gaining some momentum as private sector confidence is reviving. China continues to struggle to find a new growth strategy, although fiscal policy measures are finally helping industrial profits grow again. Mild growth signs are coming out of emerging markets as a response to currency depreciation and monetary ease over the past year, but the global growth picture remains subdued over the next 12 months. Latin American and Middle Eastern nations will continue to struggle with low commodity prices and political challenges.
Dollar			←●	Dollar depreciation began early in 2016 as the Fed tightening path began to look shallower. Oddly, the adoption of negative policy rates in Europe and Japan has encouraged currency appreciation as foreign investors position for the further gains in bond markets. Capital flows have begun to return to Asian emerging market nations, and this should continue over the next 12 months. The long dollar trade has been very crowded in recent years, and is susceptible to a gradual unwind.
Valuation			●	Assuming our earnings expectations are correct, the forward P/E multiple on the S&P 500 is above average, in the 15–16 times range, while other longer term valuation measures like market capitalization to GDP, CAPE, and Tobin's Q look extended. Relative to other developed and emerging markets, US equities tend to be on the more expensive side. Nevertheless, share repurchase activity remains quite strong.
Technical/ Sentiment		●		Household equity exposures are still below normal, and equity leadership has become increasingly narrow. With nominal and real yields still at low historical levels, and increases in rates proving gradual, investors have few other choices besides equities, private equity, and real estate to achieve their required returns. Equity corrections have been consistently met with renewed institutional buying, limiting downside risk as reflected in the market rebound in the first quarter 2016.
Fiscal Policy	●→			The federal fiscal deficit should be close to 2% of GDP over the next 12 months, a considerable improvement from the 10%levels at the depth of the Financial Crisis in 2008-09. Long run solutions to demographic based demands on fiscal policy have yet to be found, nor are infrastructure improvements being pushed to the fore, despite increasing signs of climate disruption. More populist and redistributionist fiscal policy proposals, however, may become more prevalent as the 2016 election heats up. A minimum wage hike may be forthcoming in 2017, and trade deals are likely to come under more scrutiny.

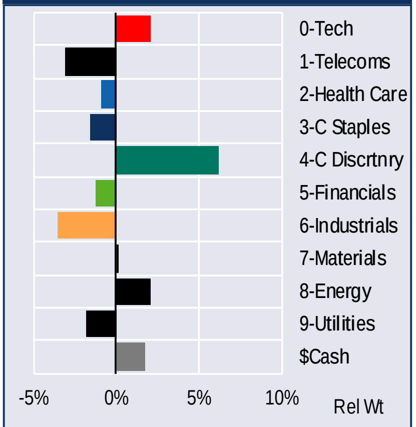
Style Snapshot

March 31, 2016

Portfolio: Alaska Retirement Management Board

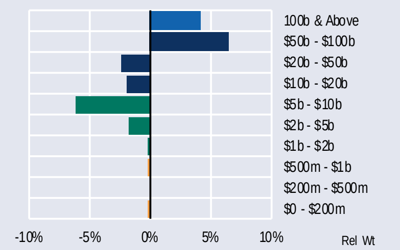
Benchmark: S&P 500 Index / Russell 1000 Growth Index

Sectors



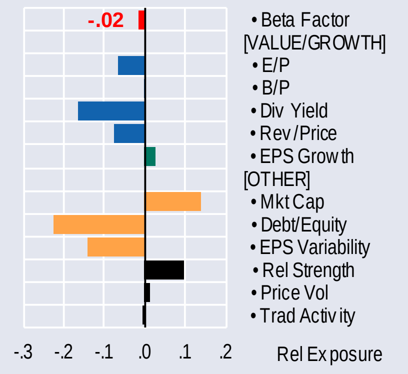
Market Cap Sectors

($ Billions)	Portfolio	Bnchmk	Relative
Weighted Average	149.92	140.19	1.07
Weighted Median	91.96	74.63	1.23
Average (Log)	4.84	4.07	1.19
Median (Log)	4.83	4.01	1.21



Northfield Factor Exposures

Portfolio Beta	Benchmark Beta	Relative Beta
0.97	0.99	0.98



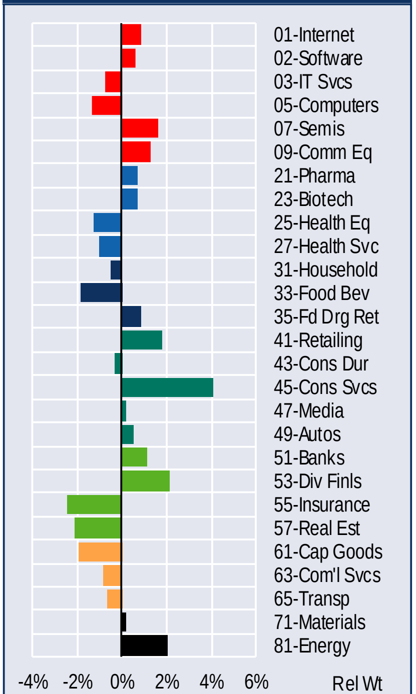
Stocks Held by Rel Wt

Relative Weight	Num	Port Wt	Bmk Wt	Rel Wt
3% +	--	--	--	--
2% - 3%	--	--	--	--
1% - 2%	35	63.3	17.3	46.0
0% - 1%	25	30.5	12.8	17.7
Underwts	1	4.5	4.7	-.2
Not Held	--	--	65.2	-65.2
TOTAL	61	98.3	100.0	-1.7

Top 18 Rel Wts

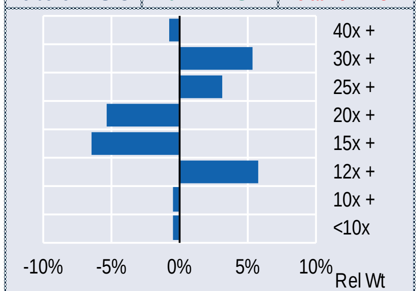
Tkr	Name	Port Wt	Bmk Wt	Rel Wt
V	Visa Inc	3.0	1.1	1.9
CSCO	Cisco Systems Inc	2.3	.4	1.9
CME	Cme Group Inc	1.9	.1	1.8
CASH	Cash	1.7	--	1.7
DLTR	Dollar Tree Inc	1.8	.1	1.6
CVS	Cvs Health Corp	2.4	.8	1.6
TSCO	Tractor Supply Co	1.7	.1	1.6
SBUX	Starbucks Corp	2.2	.7	1.5
UNH	Unitedhealth Group Inc	2.4	.9	1.5
MNST	Monster Beverage Corp	1.7	.2	1.5
RCL	Royal Caribbean Cruises Ltd	1.5	.0	1.5
TJX	Tjx Companies Inc	1.9	.4	1.5
FB	Facebook Inc	3.4	1.9	1.5
CBS	Cbs Corp	1.6	.2	1.4
CRM	Salesforce.Com Inc	1.7	.4	1.4
KO	Coca-Cola Co	--	1.4	-1.4
VZ	Verizon Communications Inc	--	1.6	-1.6
GOOG	Alphabet Inc	--	1.7	-1.7

Industries



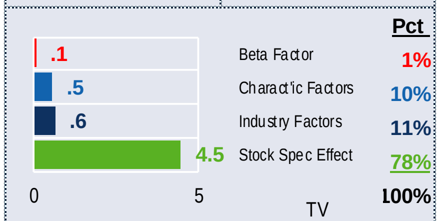
P/E (Reuters FY1)

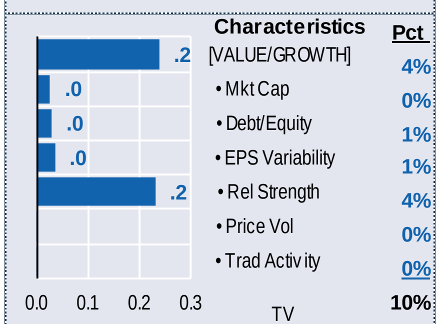
Portfolio:	Bnchmk	Relative
18.6	18.1	1.02



Northfield Risk Decomposition

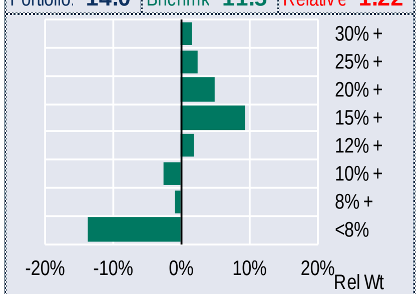
Tracking Error	2.39	Tracking Variance	5.7





Reuters Long-Term Growth

Portfolio:	Bnchmk	Relative
14.0	11.5	1.22



Concentration

Port Top 5 Stock	17%	Bmk Top 5 Stock	12%
Port Top 10	29%	Bmk Top 10	19%
Port Top 20	48%	Bmk Top 20	29%
Port "CC"	52	Bmk "CC"	128

Overlap

Weight Overlap	35%	Active Weight	65%

Source: AllianzGI US Quantitative Analytics; FactSet; Northfield US Fundamental Enhanced Model

Data through March 31, 2016

Chronology – summary

ARMB - Large Cap Core Growth

As of March 31, 2016

Description	Mar 2016	Dec 2015	Sep 2015	Jun 2015	Mar 2015
MARKET VALUE	**343759**	**347482**	**345787**	**367940**	**391479**
CASH	**5777**	**4365**	**3746**	**3687**	**4039**
CASH PCT	**1.68**	**1.26**	**1.08**	**1.00**	**1.03**
NON-CASH PCT	**98.32**	**98.74**	**98.92**	**99.00**	**98.97**
ENERGY	**5.64**	**5.03**	**3.07**	**4.19**	**5.33**
ENERGY	5.64	5.03	3.07	4.19	5.33
MATERIALS	**3.34**	**3.10**	**4.12**	**3.72**	**4.06**
MATERIALS	3.34	3.10	4.12	3.72	4.06
INDUSTRIALS	**5.72**	**6.44**	**7.25**	**7.33**	**7.79**
CAPITAL GOODS	3.76	4.12	4.81	5.10	5.29
TRANSPORTATION	1.96	2.31	2.44	2.23	2.50
CONSUMER DISCRETIONARY	**23.30**	**24.11**	**24.13**	**23.06**	**22.00**
AUTOMOBILES/COMPONENTS	1.34	1.51	1.08	1.94	1.51
CONSUMER DURABLES/APPAREL	2.81	2.80	3.07	2.94	3.90
HOTELS RESTAURANTS/LEISURE	5.22	5.45	5.24	4.37	4.30
MEDIA	4.48	3.96	4.20	4.77	4.75
RETAILING	9.44	10.39	10.54	9.03	7.53
CONSUMER STAPLES	**10.33**	**8.93**	**8.74**	**9.13**	**9.60**
FOOD & STAPLES RETAILING	3.98	3.84	3.63	3.24	3.11
FOOD BEVERAGE/TOBACCO	5.03	3.86	3.85	4.67	5.19

Description	Mar 2016	Dec 2015	Sep 2015	Jun 2015	Mar 2015
HOUSEHOLD/PERSONAL PRODUCTS	1.32	1.23	1.26	1.22	1.30
HEALTH CARE	**14.09**	**16.09**	**17.02**	**17.04**	**15.78**
HEALTH CARE EQUIP/SERVICES	3.58	4.63	4.67	2.86	1.52
PHARMACEUTICALS, BIOTECHNOLOGY & LIFE SCIENCES	10.51	11.46	12.35	14.17	14.25
FINANCIALS	**7.83**	**8.38**	**8.65**	**9.69**	**8.39**
BANKS	5.93	6.60	6.70	6.78	5.78
DIVERSIFIED FINANCIALS	1.90	1.78	1.95	2.91	2.61
INFORMATION TECHNOLOGY	**28.06**	**26.67**	**25.93**	**24.85**	**23.88**
SOFTWARE/SERVICES	17.11	15.74	14.09	13.16	12.69
TECHNOLOGY HARDWARE/EQUIPMENT	6.82	6.49	6.99	7.28	7.04
SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT	4.14	4.44	4.86	4.41	4.15
TELECOMMUNICATION SERVICES					**1.15**
TELECOMMUNICATION SERVICES					1.15

Top ten overweights and underweights

ARMB - Large Cap Core Growth vs. S&P 500 Index

As of March 31, 2016

Top Ten Overweights	% of Portfolio	% of Benchmark	Difference
VISA INC	3.03	0.82	2.21
FACEBOOK INC	3.38	1.46	1.92
CVS HEALTH CORP	2.43	0.63	1.80
STARBUCKS CORP	2.22	0.49	1.73
CME GROUP INC/IL	1.90	0.18	1.72
UNITEDHEALTH GROUP INC	2.40	0.68	1.72
DOLLAR TREE INC	1.78	0.11	1.67
TRACTOR SUPPLY CO	1.67	0.07	1.60
TJX COS INC/THE	1.89	0.29	1.60
MONSTER BEVERAGE CORP	1.65	0.11	1.54
Total	**22.35**	**4.84**	**17.51**

Top Ten Underweights	% of Portfolio	% of Benchmark	Difference
JOHNSON & JOHNSON	0.00	1.66	-1.66
GENERAL ELECTRIC CO	0.00	1.65	-1.65
BERKSHIRE HATHAWAY INC	0.00	1.48	-1.48
AT&T INC	0.00	1.34	-1.34
ALPHABET INC	0.00	1.23	-1.23
VERIZON COMMUNICATIONS INC	0.00	1.23	-1.23
PROCTER & GAMBLE CO/THE	0.00	1.22	-1.22
COCA-COLA CO/THE	0.00	1.01	-1.01
CHEVRON CORP	0.00	1.00	-1.00
HOME DEPOT INC/THE	0.00	0.94	-0.94
Total	**0.00**	**12.76**	**-12.76**

Portfolio weight by market cap

ARMB - Large Cap Core Growth vs. S&P 500 Index

As of March 31, 2016

Market Capitalization	Portfolio Percentage	Benchmark Percentage	Stocks
$500B and Above	6.67	5.84	ALPHABET INC CL A; APPLE INC
$200B to $500B	15.12	19.74	AMAZON.COM INC; EXXON MOBIL CORP; FACEBOOK INC CL A; JPMORGAN CHASE & CO; MICROSOFT CORP; WELLS FARGO & CO
$100B to $200B	26.22	19.75	ALIBABA GROUP HOLDING LTD ADR; ALLERGAN PLC; CISCO SYSTEMS INC; CITIGROUP INC; COMCAST CORP CL A; CVS HEALTH CORP; GILEAD SCIENCES INC; INTEL CORP; MCDONALD'S CORP; MERCK & CO INC; NIKE INC CL B; PEPSICO INC; PFIZER INC; UNITEDHEALTH GROUP INC; VISA INC
$50B to $100B	23.23	15.81	ABBVIE INC; ACCENTURE PLC CL A; BIOGEN INC; BROADCOM LTD; CELGENE CORP; COLGATE-PALMOLIVE CO; COSTCO WHOLESALE CORP; DANAHER CORP; DOW CHEMICAL CO/THE; LOCKHEED MARTIN CORP; PRICELINE GROUP INC/THE; SCHLUMBERGER LTD; STARBUCKS CORP; TIME WARNER INC; TJX COS INC/THE; UNION PACIFIC CORP; US BANCORP
$20B to $50B	17.53	22.64	ACTIVISION BLIZZARD INC; ALEXION PHARMACEUTICALS INC; CBS CORP CL B; CME GROUP INC/IL; CONSTELLATION BRANDS INC CL A; DELPHI AUTOMOTIVE PLC; ECOLAB INC; EOG RESOURCES INC; MONSTER BEVERAGE CORP; NXP SEMICONDUCTORS NV; PIONEER NATURAL RESOURCES CO; SALESFORCE.COM INC; UNITED CONTINENTAL HOLDINGS INC; VALERO ENERGY CORP
$10B to $20B	9.55	11.78	AMETEK INC; DOLLAR TREE INC; EDWARDS LIFESCIENCES CORP; MOHAWK INDUSTRIES INC; ROYAL CARIBBEAN CRUISES LTD; TRACTOR SUPPLY CO; VULCAN MATERIALS CO
$5B to $10B	0.00	3.96	
Below $5B	0.00	0.48	
Cash	1.68	0.00	Cash

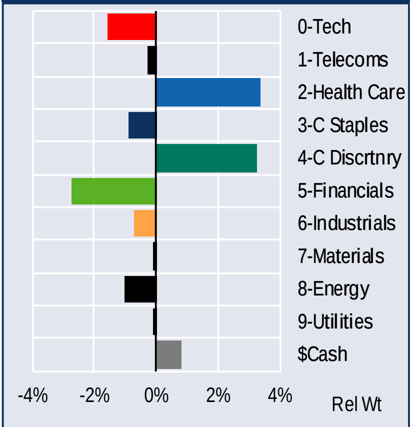
Style Snapshot

Portfolio: ARMB ESG Portfolio

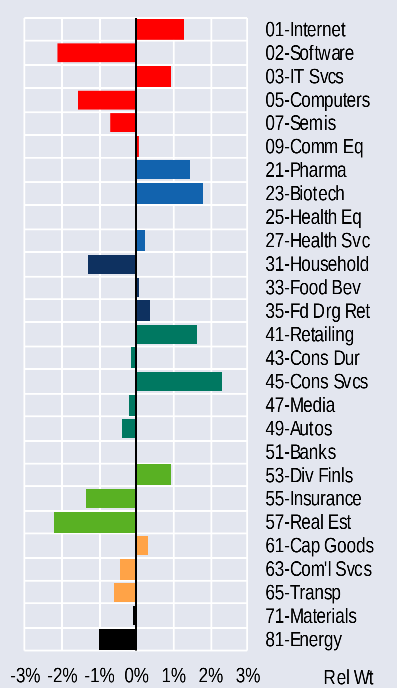
March 31, 2016

Benchmark: MSCI USA ESG Index

Sectors

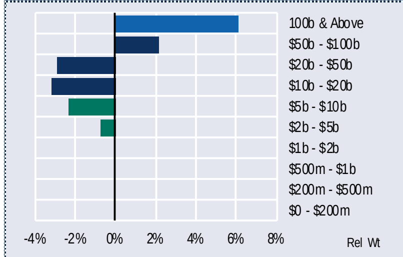


Industries



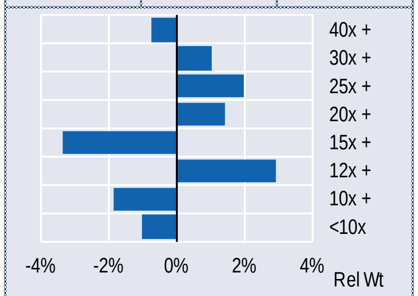
Market Cap Sectors

($ Billions)	Portfolio	Bnchmk	Relative
Weighted Average	109.11	100.09	1.09
Weighted Median	65.15	52.26	1.25
Average (Log)	4.61	4.25	1.09
Median (Log)	4.57	4.18	1.09



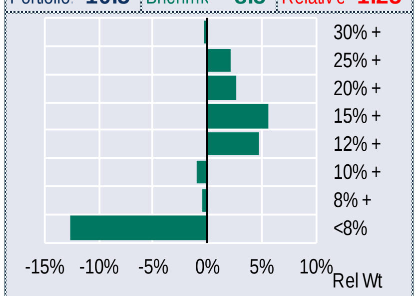
P/E (Reuters FY1)

Portfolio	Bnchmk	Relative
19.3	18.4	1.05



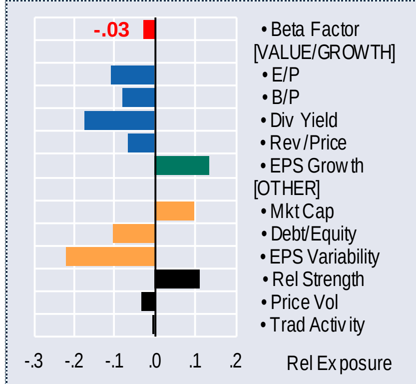
Reuters Long-Term Growth

Portfolio	Bnchmk	Relative
10.5	8.5	1.25



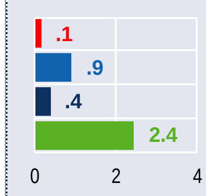
Northfield Factor Exposures

Portfolio Beta	Benchmark Beta	Relative Beta
0.97	1.00	0.97

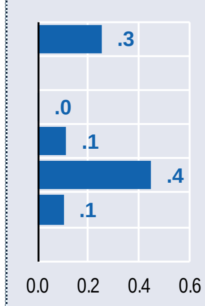


Northfield Risk Decomposition

Tracking Error	1.96	Tracking Variance	3.9



	Pct
Beta Factor	4%
Charact'ic Factors	23%
Industry Factors	10%
Stock Spec Effect	63%
	100%



Characteristics	Pct
[VALUE/GROWTH]	7%
• Mkt Cap	-1%
• Debt/Equity	0%
• EPS Variability	3%
• Rel Strength	12%
• Price Vol	3%
• Trad Activity	0%
	23%

Stocks Held by Rel Wt

Relative Weigh	Num	Port Wt	Bmk Wt	Rel Wt
3% +	--	--	--	--
2% - 3%	1	4.5	2.4	2.2
1% - 2%	6	12.0	5.4	6.7
0% - 1%	68	75.6	33.1	42.5
Underwts	4	7.0	9.5	-2.5
Not Held	--	--	49.7	-49.7
TOTAL	79	99.2	100.0	-.8

Top 18 Rel Wts

Tkr	Name	Port Wt	Bmk Wt	Rel Wt
GOOGL	Alphabet Inc	4.5	2.4	2.2
MCD	Mcdonald's Corp	2.4	1.2	1.2
SBUX	Starbucks Corp	2.1	.9	1.2
USB	U S Bancorp	1.9	.8	1.2
LOW	Lowe's Companies Inc	1.9	.7	1.1
RCL	Royal Caribbean Cruises Ltd	1.2	.2	1.0
CSCO	Cisco Systems Inc	2.5	1.5	1.0
PEP	Pepsico Inc	2.6	1.6	1.0
AWK	American Water Works Co Inc	1.1	.1	1.0
EW	Edwards Lifesciences Corp	1.2	.2	1.0
TSCO	Tractor Supply Co	1.1	.1	1.0
BMY	Bristol-Myers Squibb Co	2.1	1.1	.9
DHR	Danaher Corp	1.5	.6	.9
CTSH	Cognizant Tech Solutions	1.3	.4	.9
SLB	Schlumberger Ltd	--	1.0	-1.0
ORCL	Oracle Corp	--	1.4	-1.4
GOOG	Alphabet Inc	1.0	2.5	-1.5
PG	Procter & Gamble Co	--	2.4	-2.4

Concentration

Port Top 5 Stock	15%	Bmk Top 5 Stock	13%
Port Top 10	27%	Bmk Top 10	21%
Port Top 20	45%	Bmk Top 20	33%
Port "CC"	61	Bmk "CC"	116

Overlap

Weight Overlap	48%	Active Weight	52%

Source: AllianzGI US Quantitative Analytics; FactSet; Northfield US Fundamental Enhanced Model

Data through March 31, 2016

Chronology – summary

ARMB DC Plan - ESG

As of March 31, 2016

Description	Mar 2016	Dec 2015	Sep 2015	Jun 2015	Mar 2015
MARKET VALUE	**59433**	**61359**	**57772**	**61500**	**64635**
CASH	**477**	**685**	**623**	**525**	**901**
CASH PCT	**0.80**	**1.12**	**1.08**	**0.86**	**1.40**
NON-CASH PCT	**99.20**	**98.88**	**98.92**	**99.14**	**98.60**
ENERGY	**5.57**	**5.46**	**4.45**	**5.09**	**5.13**
ENERGY	5.57	5.46	4.45	5.09	5.13
MATERIALS	**3.71**	**3.78**	**3.73**	**3.60**	**3.94**
MATERIALS	3.71	3.78	3.73	3.60	3.94
INDUSTRIALS	**7.55**	**7.79**	**7.99**	**7.81**	**8.04**
CAPITAL GOODS	5.13	4.92	4.94	4.91	4.58
COMMERCIAL & PROFESSIONAL SERVICES	0.51	0.74	0.86	0.87	0.90
TRANSPORTATION	1.91	2.13	2.19	2.03	2.56
CONSUMER DISCRETIONARY	**17.51**	**17.77**	**18.38**	**18.32**	**16.44**
AUTOMOBILES/COMPONENTS	1.83	1.96	1.82	2.41	2.88
CONSUMER DURABLES/APPAREL	2.70	2.65	2.77	2.41	2.93
HOTELS RESTAURANTS/LEISURE	5.69	6.01	5.77	5.21	4.93
MEDIA	3.44	3.38	4.13	4.29	1.68
RETAILING	3.85	3.76	3.89	4.00	4.02
CONSUMER STAPLES	**8.17**	**7.55**	**7.72**	**8.82**	**8.09**
FOOD & STAPLES RETAILING	1.14				

Description	Mar 2016	Dec 2015	Sep 2015	Jun 2015	Mar 2015
FOOD BEVERAGE/TOBACCO	4.83	5.04	5.15	6.21	5.52
HOUSEHOLD/PERSONAL PRODUCTS	2.20	2.50	2.57	2.61	2.57
HEALTH CARE	**18.45**	**19.08**	**18.76**	**19.04**	**19.81**
HEALTH CARE EQUIP/SERVICES	4.30	4.72	5.60	4.69	7.79
PHARMACEUTICALS, BIOTECHNOLOGY & LIFE SCIENCES	14.14	14.36	13.17	14.35	12.02
FINANCIALS	**12.67**	**13.66**	**14.39**	**14.70**	**15.23**
BANKS	1.91	1.96	2.01	2.17	2.01
DIVERSIFIED FINANCIALS	6.72	7.64	8.53	8.81	8.93
INSURANCE	1.16	1.10	1.65	1.45	1.53
REAL ESTATE	2.88	2.97	2.20	2.26	2.76
INFORMATION TECHNOLOGY	**15.58**	**18.98**	**18.28**	**16.93**	**16.53**
SOFTWARE/SERVICES	9.69	12.32	11.17	9.93	9.21
TECHNOLOGY HARDWARE/EQUIPMENT	2.90	3.36	3.84	3.83	3.80
SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT	2.99	3.30	3.27	3.16	3.52
TELECOMMUNICATION SERVICES	**2.04**	**1.51**	**1.82**	**1.81**	**2.19**
TELECOMMUNICATION SERVICES	2.04	1.51	1.82	1.81	2.19
UTILITIES	**3.42**	**3.30**	**3.40**	**3.03**	**3.21**
UTILITIES	3.42	3.30	3.40	3.03	3.21

Top ten overweights and underweights

ARMB DC Plan - ESG vs. MSCI USA ESG Index

As of March 31, 2016

Top Ten Overweights	% of Portfolio	% of Benchmark	Difference
ALPHABET INC	4.52	2.37	2.15
MCDONALD'S CORP	2.41	1.23	1.18
STARBUCKS CORP	2.11	0.94	1.17
US BANCORP	1.90	0.76	1.14
LOWE'S COS INC	1.88	0.74	1.14
ROYAL CARIBBEAN CRUISES LTD	1.16	0.15	1.01
CISCO SYSTEMS INC	2.54	1.54	1.00
PEPSICO INC	2.59	1.59	1.00
AMERICAN WATER WORKS CO INC	1.12	0.13	0.99
EDWARDS LIFESCIENCES CORP	1.18	0.20	0.98
Total	**21.41**	**9.65**	**11.76**

Top Ten Underweights	% of Portfolio	% of Benchmark	Difference
PROCTER & GAMBLE CO/THE	0.00	2.38	-2.38
ALPHABET INC	0.96	2.47	-1.51
ORACLE CORP	0.00	1.39	-1.39
SCHLUMBERGER LTD	0.00	0.99	-0.99
QUALCOMM INC	0.00	0.82	-0.82
UNITED PARCEL SERVICE INC	0.00	0.78	-0.78
TEXAS INSTRUMENTS INC	0.00	0.62	-0.62
TIME WARNER CABLE INC	0.00	0.62	-0.62
THERMO FISHER SCIENTIFIC INC	0.00	0.60	-0.60
DUKE ENERGY CORP	0.00	0.59	-0.59
Total	**0.96**	**11.26**	**-10.30**

Portfolio weight by market cap

ARMB DC Plan - ESG vs. MSCI USA ESG Index

As of March 31, 2016

Market Capitalization	Portfolio Percentage	Benchmark Percentage	Stocks
$500B and Above	5.48	4.83	ALPHABET INC CL A; ALPHABET INC CL C
$200B to $500B	7.22	9.70	BERKSHIRE HATHAWAY INC CL B; JOHNSON & JOHNSON; VERIZON COMMUNICATIONS INC
$100B to $200B	26.77	18.82	3M CO; AMGEN INC; BRISTOL-MYERS SQUIBB CO; CISCO SYSTEMS INC; GILEAD SCIENCES INC; INTEL CORP; INTERNATIONAL BUSINESS MACHINES CORP; MASTERCARD INC CL A; MCDONALD'S CORP; MERCK & CO INC; NIKE INC CL B; PEPSICO INC; WALT DISNEY CO/THE
$50B to $100B	19.53	17.95	ACCENTURE PLC CL A; BIOGEN INC; BLACKROCK INC; CELGENE CORP; COLGATE-PALMOLIVE CO; DANAHER CORP; LOWE'S COS INC; MONDELEZ INTERNATIONAL INC CL A; OCCIDENTAL PETROLEUM CORP; SIMON PROPERTY GROUP INC REIT; STARBUCKS CORP; TIME WARNER INC; UNION PACIFIC CORP; US BANCORP
$20B to $50B	22.86	25.46	ALEXION PHARMACEUTICALS INC; AMERICAN TOWER CORP REIT; ANTHEM INC; BECTON DICKINSON AND CO; CHARLES SCHWAB CORP/THE; CIGNA CORP; CME GROUP INC/IL; COGNIZANT TECHNOLOGY SOLUTIONS CORP CL A; CONOCOPHILLIPS; CORNING INC; DELPHI AUTOMOTIVE PLC; ECOLAB INC; EOG RESOURCES INC; EQUINIX INC; ESTEE LAUDER COS INC/THE CL A; INTERCONTINENTAL EXCHANGE INC; KROGER CO/THE; LYONDELLBASELL INDUSTRIES NV CL A; PIONEER NATURAL RESOURCES CO; SALESFORCE.COM INC; SHERWIN-WILLIAMS CO/THE; SOUTHWEST AIRLINES CO; TESLA MOTORS INC; TRAVELERS COS INC/THE; YAHOO! INC
$10B to $20B	12.58	15.90	AMERICAN WATER WORKS CO INC; AMETEK INC; BAKER HUGHES INC; CMS ENERGY CORP; EDWARDS LIFESCIENCES CORP; EVERSOURCE ENERGY; INGERSOLL-RAND PLC; INVESCO LTD; LABORATORY CORP OF AMERICA HOLDINGS; LAM RESEARCH CORP; MARATHON PETROLEUM CORP; MOHAWK INDUSTRIES INC; ROYAL CARIBBEAN CRUISES LTD; TRACTOR SUPPLY CO; ULTA SALON COSMETICS & FRAGRANCE INC
$5B to $10B	4.75	6.59	CBRE GROUP INC CL A; INTERNATIONAL FLAVORS & FRAGRANCES INC; PINNACLE WEST CAPITAL CORP; RANGE RESOURCES CORP; ROBERT HALF INTERNATIONAL INC; SEALED AIR CORP; WHITEWAVE FOODS CO/THE
Below $5B	0.00	0.75	
Cash	0.80	0.00	Cash

Biographies

Raphael L. Edelman
Director, Senior Portfolio Manager
Co-CIO US Large Cap Growth Equities

Mr. Edelman is a senior portfolio manager, a director and Co-CIO US Large Cap Growth Equities with Allianz Global Investors, which he joined in 2004. He is co-manager of all Large-Cap Growth strategies. Mr. Edelman has 31 years of investment-industry experience. He previously worked at Alliance Capital Management, where he developed a large-cap equity product and managed institutional portfolios; before that, he was a research analyst specializing in the consumer products and services sector. Mr. Edelman has a B.A. in history from Columbia College and an M.B.A. in finance from New York University.

Melody L. McDonald
Managing Director
Relationship Manager

Ms. McDonald is a relationship manager and managing director with Allianz Global Investors, which she joined in 1986. She is responsible for a number of the firm's corporate, public, endowment and foundation clients. Ms. McDonald has 28 years of investment-industry experience. She previously worked with Wells Fargo Bank as a credit analyst and corporate lending officer. In 2002, Ms. McDonald was appointed by the president of the United States to serve on the Pension Benefit Guaranty Corporation Advisory Committee; in 2005, she served as chairman of the committee. Ms. McDonald has also served on the investment committee for the IEEE, an international engineering organization that sets standards for engineering worldwide; and on The Juilliard National Council. Ms. McDonald has an M.A. from the New England Conservatory of Music and a doctorate in music from Stanford University; she also graduated as class marshal from Harvard Business School.

Allianz Global Investors

Portfolio Management & Research

Scott T. Migliori, CFA
Managing Director, Portfolio Manager
CIO Equity US

Mr. Migliori is a portfolio manager, a managing director and CIO Equity US with Allianz Global Investors, which he joined in 2003. He is responsible for the firm's US Large Cap Select Growth and Focued Growth strategies and is a member of the firm's US Executive Committee. Mr. Migliori has 20 years of investment-industry experience and was previously with Provident Investment Counsel where he co-managed more than $2 billion in large-cap growth portfolios; before that, he was a portfolio manager and analyst on mid- and small-cap growth funds. Before beginning his investment career, Mr. Migliori was a business-litigation attorney. He has a B.S. in accounting from the University of Southern California, a J.D. from the Boalt Hall School of Law at the University of California, Berkeley, and an M.B.A. from the UCLA Anderson School of Management. Mr. Migliori is a CFA charterholder.

Joanne L. Howard, CFA
Managing Director, Senior Portfolio Manager

Ms. Howard is a senior portfolio manager and a managing director with Allianz Global Investors, which she joined in 1992. She has portfolio-management responsibilities with the US Large Cap Core Equity team and is the chief investment officer of the Private Client Group in San Francisco. Ms. Howard has more than 50 years of investment-industry experience. Before joining the firm, she was a managing director at Scudder, Stevens & Clark, where she was a senior member of the Scudder quality growth equity-management team. Before that, Ms. Howard was a manager of equity mutual funds at American Express Investment Management; the director of research at ISI Corporation; a junior security analyst with First National Bank of Chicago; and an industry analyst with CNA Financial. She has been president of the CFA Society of San Francisco and the Financial Women's Association of San Francisco. Ms. Howard has a B.B.A., phi beta kappa, from the University of Wisconsin and an M.B.A. in finance from the University of Wisconsin. She is a CFA charterholder, a member of the CFA Society of San Francisco and a member of the Financial Women's Association of San Francisco.

Jeffrey D. Parker, CFA
Managing Director
Co-CIO Equity US, US Director of Research

Mr. Parker is a senior portfolio manager, a managing director and CIO San Diego Equities with Allianz Global Investors, which he joined in 1999. He is also US Director of Research. In addition, Mr. Parker oversees the Small Cap and Systematic Equity teams. He was previously head of the Growth team, and had portfolio-management responsibilities for the Large and Mid Cap Growth products. Mr. Parker has 26 years of investment-industry experience. Before joining the firm, he was an assistant portfolio manager at Eagle Asset Management and a senior consultant at Andersen Consulting. Mr. Parker has a B.B.A. from University of Miami and an M.B.A. from Vanderbilt University. He is a CFA charterholder.

Karen B. Hiatt, CFA
Director, Senior Portfolio Manager
Co-CIO US Large Cap Growth Equities

Ms. Hiatt is a senior portfolio manager, a director and Co-CIO US Large Cap Growth Equities with Allianz Global Investors, which she joined in 1998. She is co-manager of all Large-Cap Growth strategies. Ms. Hiatt previously led US equity-research efforts and the Consumer Sector team. She has 21 years of investment-industry experience. Earlier in her career, Ms. Hiatt was a vice president at Bioscience Securities, a boutique research and investment-banking firm, where she covered food and agricultural biotech companies, and constructed merger and acquisition valuation models. She has a B.S. in finance, *cum laude*, from Santa Clara University. Ms. Hiatt is a CFA charterholder and a member of the CFA Society San Francisco.

Portfolio Management & Research – p.2

Philip R. Simon
Vice President
Portfolio Analyst, US Large Cap Equities

Mr. Simon is a portfolio analyst and a vice president with Allianz Global Investors, which he joined in 1993. His responsibilities include helping the Large Cap Growth team conduct research on issues that affect the team's large-cap holdings. Mr. Simon has 21 years of investment-industry experience. He was previously a registered representative for Amev Financial Group (now Fortis) and a trust administrator for First Trust Corporation. Mr. Simon has a B.A. in business administration from Fort Lewis College.

Brandon P. Gueno, CFA
Assistant Vice President
Product Specialist Associate

Mr. Gueno is a product specialist associate and an assistant vice president with Allianz Global Investors, which he joined in 2010. He is the primary liaison between the Large-Cap Growth/Global Technology Investment teams and the Client Relations and Sales/Marketing groups in the United States. Mr. Gueno was previously an associate relationship manager with the firm, responsible for institutional client relations. He has five years of investment-industry experience. Before joining the firm, Mr. Gueno worked in sales at GlaxoSmithKline Pharmaceuticals and served in the US Air Force as an avionics technician. He has a B.S. in industrial technology from Southern Illinois University at Carbondale, and an M.B.A. in finance and an M.S. in financial analysis and investment management from St. Mary's College of California. He is a CFA charterholder.

Nina Gupta, CFA
Director, Deputy Director of Research for the US
Senior Research Analyst & Sector Head, US Financial Services

Ms. Gupta is a senior financial analyst, a director and Deputy Director of Research for the US with Allianz Global Investors, which she joined in 2014. She is also Sector Head for the firm's US financial-services research effort. Ms. Gupta was previously a member of the Financial Institutions research team, responsible for analytical coverage of the financial sector. She has 12 years of investment-industry experience. Before joining the firm, Ms. Gupta was a senior research analyst with Portales Partners and a portfolio manager with Trellus Management Company. Before that, she was an auditor and consultant with KPMG. Ms. Gupta has a B.A. in psychology from the University of California, Los Angeles, and an M.B.A. in finance from The Wharton School, The University of Pennsylvania. Ms. Gupta is a CFA charterholder and a certified public accountant.

Sebastian Thomas, CFA
Director
Portfolio Manager, Senior Research Analyst & Sector Head, Technology

Mr. Thomas is a portfolio manager, a senior research analyst and a director with Allianz Global Investors, which he joined in 2003. He heads the firm's US technology/telecom research effort and is responsible for covering large- and mid-cap software and internet-technology companies. Mr. Thomas is also a lead portfolio manager. He has 19 years of investment-industry experience. Mr. Thomas previously worked at Roger Engemann & Associates, a Phoenix Investment Partners company; Fidelity Management and Research; Morgan Stanley; and the Federal Reserve Board of Governors. He also has experience designing, developing and managing software applications. Mr. Thomas has a B.A. in economics from Pomona College and an M.B.A. in finance and strategy from the University of Chicago. He is a CFA charterholder.

Portfolio Management & Research – p.3

Raymond F. Cunha, CFA
Director
Senior Research Analyst & Sector Head, US Industrials

Mr. Cunha is a senior research analyst and a director with Allianz Global Investors, which he joined in 2009. He is a member of the US Industrials team. Mr. Cunha has 23 years of investment-industry experience. He was previously a vice president and senior analyst at State Street Global Advisors. Before that, he was an analyst and portfolio manager in the US active quantitative strategies group at State Street. He has a B.A. in business from the University of Massachusetts and an M.B.A. from Boston University. Mr. Cunha is a CFA charterholder and a member of The Boston Security Analysts Society.

John Schroer, CFA
Director
Portfolio Manager, Sector Head, Health Care

Mr. Schroer is a portfolio manager and a director with Allianz Global Investors, which he joined in 2014. He is a portfolio manager for the AllianzGI Health Sciences Fund, the Allianz Biotechnologie Fund, and the AllianzGI Global Megatrends Fund, and is the sector head of the Health Care team. Mr. Schroer has more than 20 years of investment-industry experience. He was previously the president of Schroer Capital, a private investment firm. Before that, Mr. Schroer was an equity analyst with HealthCor Management; a managing member and portfolio manager for ITROS Capital Management; a global partner, senior vice president, and portfolio manager for the INVESCO Funds Group Global Health and Life Sciences funds; and an analyst for Trust Company of the West. Mr. Schroer has a B.S. in history and international relations and an M.B.A. in finance from the University of Wisconsin. He is a CFA charterholder.

R. Alec Patterson, CFA
Director
Senior Research Analyst, US Consumer Sector Head

Mr. Patterson is a senior research analyst and a director with Allianz Global Investors, which he joined in 1991. He is the senior consumer staples products analyst in the US, with analytical responsibilities for US packaged-food/agricultural producers, beverages, household products, tobacco and personal care. Mr. Patterson was previously a research analyst and a research associate with the firm. He has 29 years of investment-industry experience. Before, Mr. Patterson worked in the research department of Winrich Capital Management as a generalist and research associate. He has a B.A. in biology from Pomona College. Mr. Patterson is a CFA charterholder, a member of the CFA Society San Francisco and a member of the Consumer Analyst Group of New York.

Bryan Z. Agbabian, CFA
Director, Portfolio Manager
Senior Research Analyst & Sector Head

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ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	ARMB Procurement Regulations	ACTION:	**X**
DATE:	April 21, 2016	INFORMATION:	

BACKGROUND:

AS 37.10.240(a) provides that the board shall adopt regulations relating to procurement. At its initial meeting in October 2005, the Alaska Retirement Management Board (Board) adopted the policy manual, resolutions and regulations put in place by its predecessor board, the Alaska State Pension Investment Board, noting then that these governing documents would be updated as necessary in the future. The policy manual and most resolutions have now been updated.

STATUS:

Attached is an annotated red-line draft of proposed amendments to 15 AAC 112.110-375. Deleted text is capitalized and bracketed, new text is underlined; the text boxes in blue provide additional context for the change and will not appear in the final regulations when published. The proposed amendments were suggested and drafted by former Board counsel Rob Johnson, reviewed and edited by staff, and further reviewed by current legal counsel Stuart Goering. The intent is to clarify procedures, particularly as to protests, bidder preferences, appointments and delegation of Board authority.

As required by AS 37.10.240(c), notice has been published in newspapers in each judicial district in the state. The comment period ended April 15, 2016.

RECOMMENDATION:

That the board adopt the attached amended procurement regulations for publication in the Alaska Administrative Code with the understanding that non-substantive changes could be made by the regulations attorney following submission for review.

Article 2
Procurement

Section

15 AAC 112.110. Source selection

Source selection shall conform to 2 AAC 12.010 - 2 AAC 12.060. [EXCEPT FOR 2 AAC 12.040, PROCUREMENT OF LEGAL COUNSEL. THE BOARD WILL, IN ITS DISCRETION, CONTRACT FOR LEGAL COUNSEL UNDER THE COMPETITIVE SEALED PROPOSAL SET OUT IN 15 AAC 112.140.]

History: Eff. 7/17/94, Register 134; am. _/__/10, Register ____.

Authority: AS 37.10.240

The Department of Law retains outside counsel for the ARMB.

15 AAC 112.120. Specifications

Specifications will conform to 2 AAC 12.070 - 2 AAC 12.110 except that

(1) the board will, in its discretion, prepare and approve specifications for supplies and services procured by the board; and

(2) a specification that limits the procurement of items to a specific manufacturer's name or catalog numbers may be used only if the board or its designee makes a written

determination that only the identified brand name item or items will satisfy the board's needs.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.130. Competitive sealed bidding; multistep bidding

Competitive sealed bidding will be in accordance with 2 AAC 12.120 - 2 AAC 12.210 except that

(1) when 2 AAC 12.120 - 2 AAC 12.210 requires action by a procurement officer, the action will be taken by the board or its designee; and

(2) when 2 AAC 12.130 applies a $25,000 limit, a $50,000 limit will apply.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.140. Competitive sealed proposals

(a) Except for 15 AAC 112.150 - 15 AAC 112.180, the board will award contracts for professional services on the basis of competitive sealed proposals as described in this section. A request for competitive sealed proposals will contain the date, time, and place for delivering proposals, bidders preferences, the process for resolving disputes or protests respecting proposals and awards, a specific description of the professional services to be provided under the contract, and the terms under which the professional services are to be provided. The board will give public notice of its request for competitive sealed proposals by publishing the request for proposals in at least one of the following methods:

This adds a requirement that an RFP contain an outline of protest and appeal rights, as is typically done in any event; and also requires that the RFP outline the bidder preference provisions which are applicable to ARMB under AS 36.30.015(f) and found in AS 36.30.170(b). New regulation 15 AAC 112.215 would outline the general bidder preference categories.

(1) mailings to those on the contractor's list maintained under 2 AAC 12.060;

(2) publication in a newspaper of general circulation;

(3) publication in a newspaper of local circulation in the area pertinent to the procurement; or

(4) publication through other appropriate media.

(b) A proposer may correct, modify, or withdraw a proposal before the time and date set for receipt of proposals by written request received in the office designated in the request for proposal before the time and date set for proposal opening. A request under this subsection must be delivered in a sealed envelope with the solicitation number printed on the outside of the envelope and must be accompanied by written authorization by the proposer for the correction, modification, or withdrawal. The board will include all documents relating to the correction, modification, or withdrawal of a bid in the appropriate procurement file.

(c) Upon receipt of a proposal, modification, or correction, the board will note the date and time of receipt upon the envelope and will hold the proposal, modification, or correction in a secure place. After the date set for receipt of proposals, the board will prepare a register of proposals received. The register will include

(1) the name of each offeror; and

(2) a description of the services, supplies, or items offered.

(d) Unless otherwise noted in the request for proposals, the board will not accept a proposal, correction, modification, or withdrawal received after the date set for receipt of proposals unless the board determines that the delay was an error attributable to the board.

(e) The board will, in its discretion, cancel a request for proposal, reject any or all proposals in whole or in part, or delay the date for opening proposals, or decline to accept the recommendations of the evaluation committee as set out in (i) of this section, if the board determines it to be in the best interest of the board to do so. The board will make the reasons for the cancellation, rejection, or delay a part of the procurement file.

(f) The evaluation committee will be appointed by the [CHAIRMAN] <u>the chair of the board</u>. The evaluation committee shall evaluate the proposals, as follows:

Corrects an antiquated reference to "chairman" of ARMB.

(1) the evaluation committee shall base their evaluations only on the factors set out in the request for proposals;

(2) the evaluation committee may use a numerical or other rating system;

(3) if the evaluation committee uses a numerical system, the evaluation committee shall award the contract to the offeror receiving the highest final score;

(4) if the evaluation committee does not use a numerical system, each member of the committee shall justify or explain that member's ranking determination in writing;

(5) the weighing factor or numerical system that the evaluation committee uses must be as set out in the request for proposals; and

(6) cost may be an evaluation criteria at the discretion of the board.

(g) If the board receives only one responsive and responsible proposal in response to a request for proposal, the board will, in its discretion, accept the proposal, reject the proposal, or resolicit proposals.

(h) Offerors shall fully comply with all terms of the request for proposals and with 15 AAC 112.110 - 15 AAC 112.370. The <u>board, board's designee or the</u> evaluation committee <u>may</u> [SHALL] determine nonresponsive [BIDS] <u>proposals</u> and <u>shall</u> reject those proposals.

Clarifies that several sources may make the "non-responsive" bid

(i) If the evaluation committee determines, as part of an evaluation conducted under 15 AAC 112.140(f), that a proposal is reasonably susceptible for award, the committee may offer the offeror of the proposal the opportunity to discuss the proposal with the evaluation committee. The evaluation committee may adjust or alter the evaluation of a proposal as a result of the discussion. During a discussion under this subsection,

(1) if there is a need for substantial clarification or change in the request for proposals, the evaluation committee shall amend the request for proposals to incorporate the changes;

(2) the evaluation committee may limit discussion to specific sections of the request for proposals; and

(3) the committee may not use auction techniques that reveal one offeror's bid price to another offeror and may not disclose any information derived from competing proposals.

(j) The evaluation committee shall present one or more offerors to the board for consideration upon a finding that such offerors may qualify as apparently successful proposals. The board will then review the evaluation committee's findings and any recommendations and may select an offeror from among those presented as the apparently successful proposals and issue a notice of intent to award the contract. The notice of intent to award the contract does not constitute a notice to proceed. The notice of intent to award the contract will contain

(1) a statement of the proposed contract amount;

(2) the name of the apparently successful offeror; and

(3) a brief description of the professional services that will be the subject of the contract.

(k) Multi-Step Sealed Proposals. If the board considers it impractical initially to prepare a definitive purchase description to support an award based on listed selection criteria, the board will, in its discretion, issue an expression of interest requesting the submission of unpriced technical offers and will later issue a request for proposals limited to the offerors whose offers are determined to be technically qualified under the criteria set out in the expression of interest.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143, am. _/__/10, Register ____.

Authority: AS 37.10.240

15 AAC 112.150. Small purchases

(a) Procurement for supplies, services, including professional services, and construction that is estimated to cost less than $50,000 is governed by this section.

(b) For a procurement described in (a) of this section, the board will use procedures adequate and reasonable to provide competition and to make records to facilitate auditing of the board regarding its purchases of supplies, services, or construction.

(c) For procurement of supplies, services, or construction estimated to cost more than $10,000, but less than $50,000, the procedures set out in this subsection will be followed, except that, if those procedures are not practicable under the circumstances, the procedures required by (b) of this section will be followed:

(1) at least three firms or other persons will be contacted for quotations, either written or oral; if quotations are solicited

(A) orally, the board or its designee will record

(i) who made the solicitation;

(ii) the specifications or items solicited;

(iii) the date that the solicitation took place;

(iv) the name of firms or other persons contacted; if a firm, the name of the person in the firm contacted; and

(v) the response of each firm or other person; or

(B) in writing, the board or its designee will record

(i) a list of persons contacted;

(ii) a summary of the responses; and

(iii) copies of all quotations received;

(2) the record prepared under (1) of this subsection will be made part of the procurement file;

(3) the award will be made to the lowest responsive and responsible bidder, taking into account any applicable Alaskan bidder and Alaskan products preferences, and will be made in accordance with the specifications and award criteria in the solicitation.

(d) The board or its designee will, in its discretion, use an appropriate contractors list. It is not necessary to solicit all vendors on a contractors list. If used, the list will be rotated to the extent necessary to give all interested prospective contractors opportunities to compete. Nothing in this section limits the board or its designee from contracting additional firms or other persons not on the list.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143

Authority: AS 37.10.240

15 AAC 112.160. Sole source procurements

(a) A determination by the board that a procurement be restricted to one potential contractor must be accompanied by a written explanation as to why a procurement from a source is in the best interest of the beneficiaries of the pension funds. The board will, in its discretion, advertise an intent to make a sole source award for the purpose of determining if other sources are reasonably available or interested in a particular procurement. The board will make a determination in writing that a sole source exists. The determination must state in detail the factual basis for the determination that sole source conditions exist and for the selection of the particular source. The board will maintain the determination in the procurement file. Award of a sole source procurement may not be made without the signature of the board secretary and the approval of the board given at a regular meeting.

(b) The written determination required in (a) of this section must specify the duration of its effectiveness.

(c) The board or its designee will conduct negotiations, as appropriate, as to price, delivery, and terms of a sole source procurement.

(d) The following are examples of circumstances in which sole source procurement might be appropriate:

(1) if the compatibility of equipment, accessories, or replacement parts is the main consideration;

(2) if a specific item is needed for trial use or testing, including testing of a prototype;

(3) if an item is to be procured for resale;

(4) if public utility services are to be procured;

(5) if specific market information services are to be procured;

(6) if a person possesses a special expertise required to perform the specific professional service; and

(7) if the procurement is for the services of legal counsel for the purpose of advising or representing the state in specific civil or criminal proceedings or on specific matters before federal or state regulatory agencies, boards, or commissions.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143

Authority: AS 37.10.240

15 AAC 112.170. Limited competition procurements

(a) Any request by the board that a procurement be restricted to several potential contractors must be accompanied by a written explanation as to why the competitive sealed bidding or competitive sealed proposal processes are impractical or contrary to the public interest. The board will, in its discretion, advertise an intent to make a limited competition procurement for the purpose of determining if other sources are available or interested in a particular procurement. Award of a limited competition procurement may not be made without the signature of the board secretary and the approval of the board.

(b) A procurement under this section must be for less than $100,000.

(c) The board or its designee will conduct negotiations, as appropriate, as to price, delivery, and terms, equally with each potential contractor for a limited competition procurement.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143

Authority: AS 37.10.240

15 AAC 112.180. Emergency procurements

(a) The board will, in its discretion, make a procurement under emergency conditions

(1) when a threat to public health, safety, or welfare exists;

(2) when a situation that makes a procurement through competitive sealed bidding impractical or contrary to the public interest exists; or

(3) to protect private or public property.

(b) Reasons for finding that emergency conditions exist include

(1) economic considerations that preclude routine solicitation;

(2) delays inherent in the normal procurement process;

(3) extreme weather conditions; and

(4) equipment failure when the need for timely repair is essential.

(c) The board will make a written determination that emergency conditions exist. The written determination must state in detail the factual basis for the determination that emergency conditions exist and for the selection of the particular contractor. The board will maintain the determination in the procurement file.

(d) The appropriate board officer will also make and promptly forward to the deputy commissioner of the Department of Revenue a record of an emergency procurement. The record must plainly set out

(1) the contractor's name;

(2) the amount spent and the type of contract;

(3) a list of the supplies, equipment, services, construction, office or other space leases, personal property, or professional services procured under the contract;

(4) a brief summary of the emergency determination; and

(5) the assigned identification number of the procurement file.

(e) For a procurement under this section, the board will procure supplies and services by any method the board considers reasonable under the circumstances.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.190 IS REPEALED. [CONTRACT FORMATION AND MODIFICATION

CONTRACT FORMATION AND MODIFICATION WILL BE IN ACCORDANCE WITH 2 AAC 12.470 - 2 AAC 12.570 EXCEPT

(1) WHEN 2 AAC 12.470 REQUIRES ACTION BY THE "CHIEF PROCUREMENT OFFICER" OR A "PROCUREMENT OFFICER," THE BOARD MAY TAKE ACTION; AND

(2) EACH SOLICITATION WILL ESTABLISH PROCEDURES FOR PRICE ANALYSIS IN THE BID EVALUATION PROCESS.]

History: eff. 7/17/94, Register 134]; am. __/__/10, Register ___.

Authority: AS 37.10.240

Repeals a regulation which has a confusing overlap with regulation 15 AAC 112.240. The latter regulation is also amended.

15 AAC 112.200. Supply management

Supply management will be in accordance with 2 AAC 12.580 - 2 AAC 12.610.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.210. Legal and contract remedies

(a) Other than as provided in this section, legal and contract remedies will be in accordance with AS 36.30.550-670. [2 AAC 12.615 - 2 AAC 12.690.]

(b) Notice of an intent to award a contract does not constitute a formal award of a contract. The notice of intent to award must include

(1) a statement of the bidder's right under this section to protest the award, including the time within which the protest must be received; and

(2) the name of the successful bidder.

(c) A bidder to a request for proposals under these regulations may protest the proposed award of contract for services by filing a protest with the board's designee identified in the request for proposals within ten calendar days following notice of intent to award the contract. The minimum contents of a protest will be specified in the request for proposals. Upon receipt of that protest, the board's designee will advise all respondents to the request for proposals of the existence of the protest, and the board's designee will render a written decision based on the protest or such other materials as the board's designee deems relevant. That written decision may be appealed to the office of administrative hearings within the manner and time provided in AS 44.64.060. Unless the board decides to cancel the request for proposals, a written decision by the office of administrative hearings shall be deemed the final decision of the board, including for purposes of any appeal to superior court.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143; am. __/__/10, Register ___.

Authority: AS 37.10.240

Subsection (a) is amended to incorporate by reference statutory provisions in AS 36.30--the general procurement code--rather than certain regulations which, standing alone, are confusing in their applicability. The subsection notes that the cited statutes might not apply if other provisions of this section otherwise provide. Subsection (b) is added to specify that a notice of intent is not an award and that certain appeal rights are allowed. Subsection (c) is added to clarify the protest and appeal procedures for ARMB. Notably, this subsection provides that the decision by the hearing officer from the office of administrative hearings renders the final decision in a procurement appeal.

15 AAC 112.215 BIDDER PREFERENCES.

Proposals submitted under 15 AAC 112.110-15 AAC 112.370 shall be evaluated to consider an Alaska bidder preference of five percent under AS 36.30.170(b), an Alaska products preference under AS 36.30.322-36.30.338, and a recycled products preference under AS 36.30.337. An Alaska bidder means a person who

(1) holds a current Alaska business license;

(2) submits a bid for goods, services, or construction under the name as appearing on the person's current Alaska business license;

(3) has maintained a place of business within the state staffed by the bidder or an employee of the bidder for a period of six months immediately preceding the date of the bid;

(4) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship and the proprietor is a resident of the state, is a limited liability company organized under AS 10.50 and all members are residents of the state, or is a partnership under former AS 32.05, AS 32.06, or AS 32.11 and all partners are residents of the state; and

(5) if a joint venture, is composed entirely of ventures that qualify under (1) – (4) of this subsection.

History: Eff _/_/10, Register____.

Authority: AS 36.30.015(f); AS 37.10.240

> *This new regulation spells out and directs a reader to what bidder preferences are to be applied.*

15 AAC 112.220. Intergovernmental relations

Requests made to another state procurement unit will be made in accordance with 2 AAC 12.700 - 2 AAC 12.710.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.230. Authority to delegate

(a) The board will, in its discretion, delegate its authority under 15 AAC 112.110-375 [THE PROCUREMENT REGULATIONS] to a public official as the board's designee. A delegation of authority must be in writing.

(b) The board may revoke authority that it has delegated. The revocation must be in writing.

> *This regulation is modified to specify the process for delegation of board authority to a board designee. The board however has the authority to delegate differently or more specifically and has already done so with Res 2010-15.*

History: Eff. 7/17/94, Register 134; am. __/__/10, Register ___.

Authority: AS 37.10.240

15 AAC 112.240. Determination of contractual terms and conditions

The board or its designee will, in its discretion, determine the contractual provisions, terms, and conditions of solicitations and contracts, if the provisions, terms, and conditions are not contrary to statutory or regulatory requirements governing the procurement and if [ALL] changes to standard contract terms established under provisions such as 12 AAC 12.470 have been reviewed and approved as to form by the attorney general.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143; am. __/__/10, Register ___.

Authority: AS 37.10.240

This regulation which leaves general authority of the board to set contract terms, but still calls for attorney general review of changes to "boiler plate" terms in operation under the general procurement code provisions such as 12 AAC 12.470. Status quo is intended to be preserved.

15 AAC 112.250. Non-collusion certification

Solicitations must provide that by submitting a bid or offer, the bidder or offeror certifies under penalty of perjury that the price submitted was independently arrived at without collusion.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.260. Bid, payment, and performance bonds for contracts

Bid, payment, and performance bonds will be in accordance with 2 AAC 12.810.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.270. Conditioning bids or proposals on other awards not acceptable

A bid or proposal that is conditioned upon receiving award to both the particular contract being solicited and another state contract is nonresponsive unless conditioned bids are specifically authorized in the invitation to bid.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.280. Extension of solicitation opening time; cancellation of solicitation; amendment of solicitation

Extensions, cancellations, and amendments will be in accordance with 2 AAC 12.850.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.290. Rejection of all bids or proposals

Rejection of all bids or proposals will be in accordance with 2 AAC 12.860.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.300. Rejection of individual bids or proposals

Rejection of individual bids will be in accordance with 2 AAC 12.870.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.310. Disposition of bids or proposals

If bids or proposals are rejected, the bids or proposals that have been opened must be retained in the procurement file.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.320. Low tie bids or proposals

Low tie bids or proposals are low responsive bids or proposals from responsible bidders or offerors which are either identical in price or appropriate evaluation factors. If low tie bids or proposals exist, award will be made through a random drawing. Award may not be made by dividing the procurement among identical bidders unless the board reserves the discretion to make such a decision.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.330. Extension of time for bid or proposal acceptance

After opening bids or proposals, the board or its designee will, in its discretion, request bidders or offerors to extend the time during which the board will accept a bid or proposal.

History: Eff. 7/17/94, Register 134; am 10/13/96, Register 143

Authority: AS 37.10.240

15 AAC 112.340. Multiple award

Multiple awards will be in accordance with 2 AAC 12.920.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.345. APPLICABILITY OF AS 36.30 AND 2 AAC 12.

In applying the provisions of AS 36.30 and 2 AAC 12 to the board's procurement regulations and procedures, references to the departments or commissioners of administration or transportation and public facilities shall be to the board or the board's designee or, if the context requires, to the office of administrative hearings.

History: Eff. __/__/10, Register ___.

Authority: AS 37.10.240

This new regulation is proposed to clarify how the provisions of the general procurement code, including its regulations, are to interface with ARMB regulations. The general procurement code refers to the department of administration and DOTPF, a reference which is not applicable here.

15 AAC 112.350. PROCEDURES FOR CERTAIN BOARD DELEGATIONS AND APPOINTMENTS [new title]

(a) As provided in AS 37.10.071, the board will, in its discretion, delegate investment, custodial, or depository authority. Contracts for these professional services will be supported under an official delegation of authority issued by the board.

(b) Unless otherwise specified by the board and this section, the provisions of this chapter do not apply to appointments of members of the investment advisory council under AS 37.10.270 and the provisions of 15 AAC 112.110 - 15 AAC 112.340 do not apply to the delegation of authority under AS 37.10.071 and 15 AAC 112.350.

History: Eff. 7/17/94, Register 134 and 10/13/96, Register 143; am __/__/10, Register ___.

Authority: AS 36.30.015

AS 37.10.071

AS 37.10.240

AS 37.10.270

This regulation is rewritten to combine 15 AAC 112.350 and .375 and to fill a "void" respecting procedures applicable to delegations and IAC appointments.

15 AAC 112.360. Travel

Travel and all expenditures relating to travel will be in accordance with regulations adopted by the commissioner of the Department of Administration.

History: Eff. 7/17/94, Register 134

Authority: AS 37.10.240

15 AAC 112.370. Definitions
Relocated.

Editor's note: As of Register 143 (October, 1997), 15 AAC 112.370 was relocated by the regulations attorney to 15 AAC 112.990.

15 AAC 112.375. Applicability
Relocated.
As of Register ___ (_______2010), 15 AAC 112.375 was relocated by the regulations attorney to 15 AAC 112.350(b)

Moved to new 15 AAC 112.350(b).

State of Alaska Retirement Systems

Actuarial Presentation to the ARMB Actuarial Committee, April 20, 2016
Actuarial Presentation to the ARMB, April 21, 2016

Larry Langer, David Kershner and Melissa Bissett

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Agenda

- Preliminary Actuarial Valuation Results for PERS and TRS
- Changes to be Reflected in Final Valuations
- SB 207/209

Preliminary Actuarial Valuation Results for PERS and TRS

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Purpose of the Annual Actuarial Valuation

An actuarial valuation is performed on each retirement System annually as of the end of the fiscal year. The main purposes of the actuarial valuations detailed in this report are:

1. To determine the Employer/State contributions necessary to meet the ARMB's funding policy for the Systems;
2. To disclose the funding assets and liability measures as of the valuation date;
3. To disclose the healthcare accounting measures for the System required by GASB No. 43 for the last fiscal year;
4. To review the current funded status of the Systems and assess the funded status as an appropriate measure for determining future actuarially determined contributions;
5. To compare actual and expected experience under the Systems during the last fiscal year; and
6. To report trends in contributions, assets, liabilities, and funded status over the last several years.

The Actuarial Valuation Process

The following diagram summarizes the inputs and results of the actuarial valuation process.

INPUT

- Member Data
- Asset Data
- Benefit Provisions
- Actuarial Assumptions
- Funding Methodology

RESULTS

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio
- State Assistance and Employer Contributions
- Projections

Over the short term, contributions are determined by the actuarial valuation based upon estimated investment return, benefits and expenses using assumptions and methods recommended by the actuary and adopted by the ARMB. Over the long term, contributions are adjusted to reflect actual investment return, benefits and expenses.

A glossary of actuarial terms can be found at the end of the valuation reports.

Preliminary Key Observations from FY15 Valuations

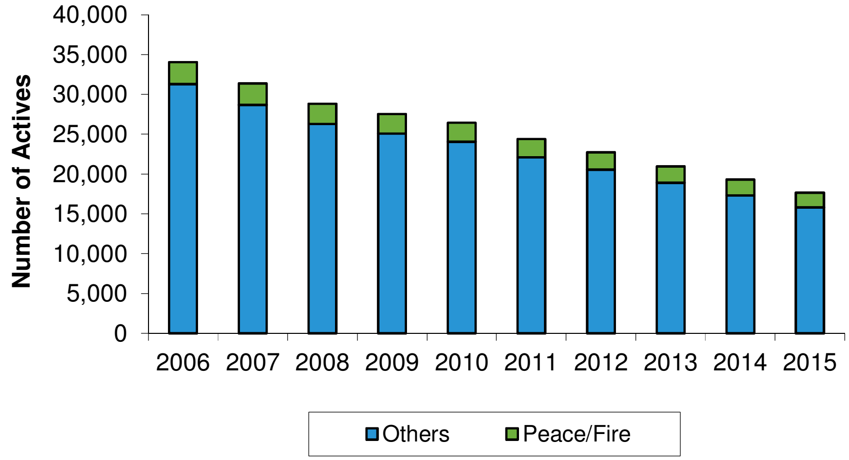
The actuarial valuation is done each year to refine the estimates the actuary developed in the prior valuation and reflect the actual events that occurred. This past year, as is common, events happened that were either not anticipated or were different from expected and materially impacted the results:

- More significant events causing an impact:
  - Large State Assistance contribution made during FY15
  - Retiree medical claims were less than expected (more on that later)
- Less significant, yet still material events causing an impact:
  - FY15 investment return was less than the assumed return of 8%
  - Salary increases were less than expected
  - Lower Post Retirement Pension Adjustments (PRPA) than expected
  - More deaths than expected
  - Valuation process refinements

Valuation Input

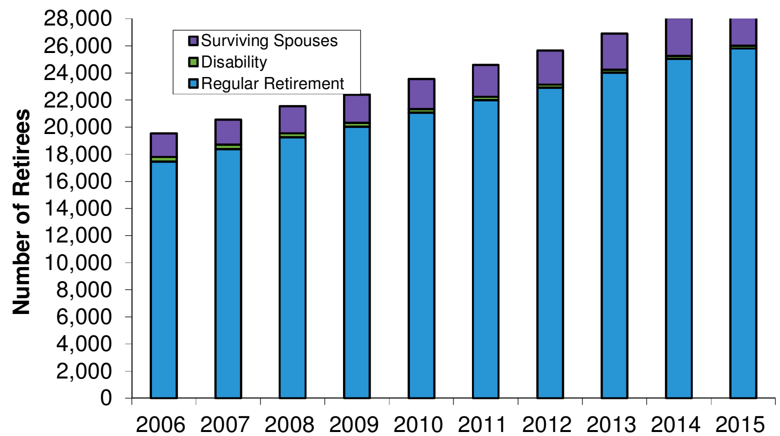
Valuation Input

Membership Data PERS



During the period June 30, 2014 to June 30, 2015, salary increases for continuing active members were less than anticipated in the valuation assumptions, which led to lower liabilities than expected of approximately $91 million. The net effect of this was a decrease of approximately 0.32% in the Employer/State contribution rate for FY18.

The overall effect of participant data changes was an unexpected increase in liabilities to the System. There was also a sizable unexpected decrease in liabilities due to COLA/PRPA increases during FY15. The combination of the demographic and COLA/PRPA experience resulted in an increase in the Employer/State contribution rate for FY18 of approximately 0.34%.

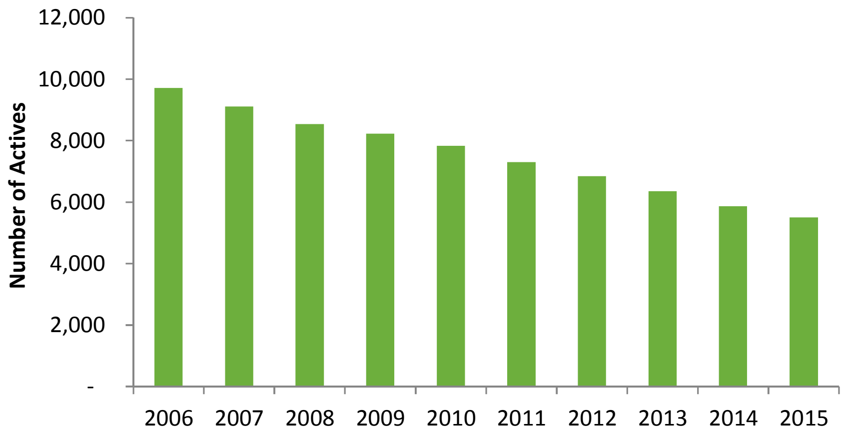


Retiree medical claims were much lower than anticipated during the year as described in Section 6.2 of the actuarial report. This resulted in liabilities being approximately $885 million lower than expected and a decrease in the Employer/State contribution rate for FY18 of approximately 3.53%.

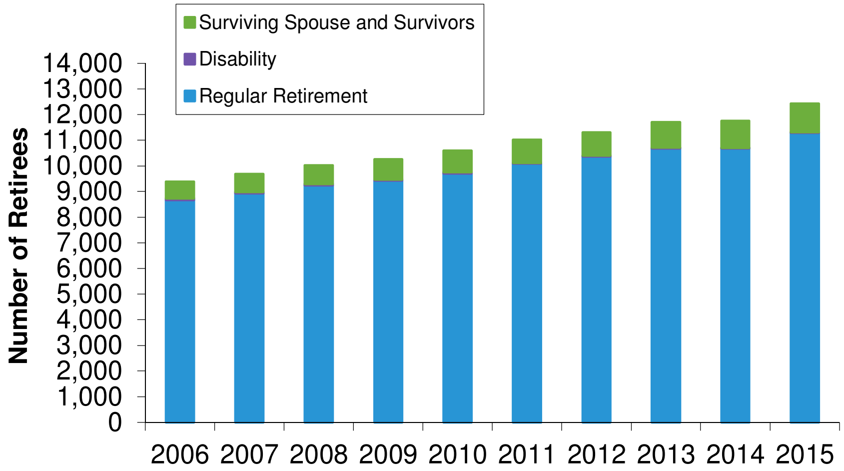
A detailed summary of the membership data used in this valuation is provided in Section 5 of the actuarial report.

Valuation Input

Membership Data TRS



During the period June 30, 2014 to June 30, 2015, salary increases for continuing active members were less than anticipated in the valuation assumptions, which led to lower liabilities than expected of approximately $26 million. The net effect of this was a decrease of approximately 0.34% in the Employer/State contribution rate for FY18.



The overall effect of participant data changes was an unexpected increase in liabilities to the System. There was also a sizable unexpected decrease in liabilities due to COLA/PRPA increases during FY15. The combination of the demographic and COLA/PRPA experience resulted in an increase in the Employer/State contribution rate for FY18 of approximately 0.52%.

Retiree medical claims were much lower than anticipated during the year as described in Section 6.2 of the actuarial report. This resulted in liabilities being approximately $311 million lower than expected and a decrease in the Employer/State contribution rate for FY18 of approximately 4.07%.

A detailed summary of the membership data used in this valuation is provided in Section 5 of the actuarial report.

Valuation Input

Asset Data: Market Value of Assets ($000's) PERS

Fiscal Year 2015	Pension	Healthcare	Total Fair Value
1. Net Assets, June 30, 2014 (fair value)	$ 7,731,438	$ 6,913,160	$14,644,598
2. Additions:			
a. Employee Contributions	$ 100,036	$ 656	$ 100,692
b. Employer Contributions	226,136	171,028	397,164
c. Employer Legislative Relief	1,000,000	0	1,000,000
d. Interest and Dividend Income	150,734	126,851	277,585
e. Net Appreciation/(Depreciation) in Fair Value of Investments	121,302	96,106	217,408
f. Medicare Part D Subsidy	0	46,929	46,929
g. Other	36	54	90
h. Total Additions	$ 1,598,244	$ 441,624	$ 2,039,868
3. Deductions:			
a. Medical Benefits	$ 0	$ 361,930	$ 361,930
b. Retirement Benefits	686,493	0	686,493
c. Refunds of Contributions	10,049	0	10,049
d. Investment Expenses	18,725	16,244	34,969
e. Administrative Expenses	7,553	14,647	22,200
f. Total Deductions	$ 722,820	$ 392,821	$ 1,115,641
4. Net Assets, June 30, 2015 (fair value)	$ 8,606,862	$ 6,961,963	$15,568,825
Approximate Fair Value Investment Return Rate During FY15 Net of All Expense	3.1%	2.8%	2.9%
Liquidity Factor	11.7	19.2	14.3

The Market Value of Assets increased from $14.6 to $15.6 billion during FY15. The investment return for the market value of assets for FY15 was approximately 2.9%, less than the assumed return of 8%.

The FY15 State Assistance contribution of $1 billion increased the funded ratio of the plan by about 5%. The FY15 State Assistance contribution was already reflected in the FY17 contribution rates.

Retirement benefits increased from $640 million in FY14 to $686 million in FY15, while medical benefits increased from $355 million to $362 million. Actual benefits paid during FY15 of $1.048 billion were less than the $1.119 billion expected in last year's valuation, primarily due to medical claims experience.

The market value of assets is provided in Section 2 of the actuarial report.

Valuation Input

Asset Data: Market Value of Assets ($000's) TRS

Fiscal Year 2015	Pension	Healthcare	Total Fair Value
1. Net Assets, June 30, 2014 (fair value)	$ 3,771,139	$ 2,248,135	$ 6,019,274
2. Additions:			
a. Employee Contributions	$ 45,506	$ 227	$ 45,733
b. Employer Contributions	36,374	26,922	63,296
c. Employer Legislative Relief	1,662,700	337,300	2,000,000
d. Interest and Dividend Income	86,637	45,241	131,878
e. Net Appreciation/(Depreciation) in Fair Value of Investments	75,069	36,145	111,214
f. Medicare Part D Subsidy	0	15,416	15,416
g. Other	9	16	25
h. Total Additions	$ 1,906,295	$ 461,267	$ 2,367,562
3. Deductions:			
a. Medical Benefits	$ 0	$ 109,740	$ 109,740
b. Retirement Benefits	416,354	0	416,354
c. Refunds of Contributions	2,191	0	2,191
d. Investment Expenses	9,145	5,212	14,357
e. Administrative Expenses	2,789	5,484	8,273
f. Total Deductions	$ 430,479	$ 120,436	$ 550,915
4. Net Assets, June 30, 2015 (fair value)	$ 5,246,955	$ 2,588,966	$ 7,835,921
Approximate Fair Value Investment Return Rate During FY15 Net of All Expenses	3.4%	3.0%	3.2%
Liquidity Factor	10.8	22	13.1

The Market Value of Assets increased from $6.0 to $7.8 billion during FY 15. The investment return for the market value of assets for FY15 was approximately 3.2%, less than the assumed return of 8%.

The FY15 State Assistance contribution of $2 billion increased the funded ratio of the plan by about 20.5%. The FY15 State Assistance contribution was already reflected in the FY17 contribution rates.

Retirement benefits increased from $397 million in FY14 to $416 million in FY15, while medical benefits *decreased* from $117 million to $110 million. Actual benefits paid during FY15 of $526 million were less than the $580 million expected in last year's valuation, primarily due to medical claims experience.

The market value of assets is provided in Section 2 of the actuarial report.

Valuation Input

Benefit Provisions

PERS & TRS

PERS and TRS provide for both retirement income and retiree medical benefits. Members hired before July 1, 2006 participate in the Defined Benefit (DB) plans and receive pension and health benefits. Members hired after June 30, 2006 participate in the Defined Contribution (DC) plans and receive an annual contribution to their DC and HRA accounts, and occupational death and disability benefits.

DB plan members contribute the following percentages of pay:

- 7.5% for peace/fire PERS members
- 6.75% for other PERS members
- 8.65% for TRS members

There were no significant changes in benefit provisions from the prior year's valuation.

A detailed summary of the benefit provisions is provided in Section 6.1 of the actuarial reports.

Valuation Input

Actuarial Assumptions

PERS & TRS

- Demographic (future events that relate to people)
  - Retirement
  - Termination
  - Disability
  - Death
- Economic (future events that relate to money)
  - Interest rate – 8% per year net of expenses
  - Salary increases (individual, vary by age/service)
  - Payroll growth – 3.62% per year
    - Inflation – 3.12%
    - Real wage growth – 0.50%
- There were no changes in actuarial assumptions from the prior year's valuations. Medical claims costs are analyzed and updated each year as described in Section 6.2 of the actuarial reports.

The latest assumptions were adopted for use beginning with the June 30, 2014 valuations, based on the experience study prepared as of June 30, 2013 and adopted by the ARMB in December 2014.

The next experience study will be prepared as of June 30, 2017 and will be used to set assumptions beginning with the June 30, 2018 valuations. This policy of reviewing assumptions every four years is a best practice.

A detailed summary of the actuarial assumptions and methods is provided in Section 6.3 of the actuarial reports.

Funding Methodology

PERS & TRS

The Funding Methodology is the payment plan and is comprised of the following three components:

- **Actuarial Cost Methods** allocate costs to the actuarial accrued liability (i.e. the amount of money that should be in the fund) for past service, and normal cost (i.e. the cost of benefits accruing during the year) for current service. The cost method used is the Entry Age Normal cost method and develops normal costs that stay level as a percent of payroll.
- **Asset Valuation Methods** smooth or average the market returns over time to alleviate contribution volatility that results from market returns. The actuarial asset value was reinitialized to equal the fair value of assets as of June 30, 2014. Beginning in FY15, the actuarial asset value will recognize 20% of the market gain or loss each year, for a period of up to five years.
- **Amortization Methods** determine the payment schedule for unfunded actuarial accrued liability (i.e. the difference between the actuarial accrued liability and actuarial value of assets). The payment schedule is a closed 25-year period from June 30, 2014.

Contribution rates for a fiscal year are based on the actuarial valuation for the period three years earlier. For example, this June 30, 2015 valuation is used to determine contribution rates for FYE June 30, 2018.

There were no changes in funding methodology from the prior year’s valuations.

A detailed summary of the actuarial methods and valuation procedures is provided in Section 6.2 of the actuarial reports.

Valuation Results

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Valuation Results

Actuarial Value of Assets ($000's)

PERS

	Pension	Healthcare	Total
1. Deferral of Investment Gain/(Loss) for FY15			
a. Fair Value, June 30, 2014	$ 7,731,438	$ 6,913,160	$ 14,644,598
b. Employee Contributions	100,036	656	100,692
c. Employer Contributions	226,136	171,028	397,164
d. Employer Legislative Relief	1,000,000	0	1,000,000
e. Medicare Part D Subsidy	0	46,929	46,929
f. Benefit Payments for FY15	696,542	361,930	1,058,472
g. Actual Investment Return (net of expenses)	245,794	192,120	437,914
h. Expected Return Rate	8.00%	8.00%	8.00%
i. Expected Return - Weighted for Timing	651,167	542,540	1,193,707
j. Investment Gain/(Loss) for the Year (g. – i.)	(405,373)	(350,420)	(755,793)
k. Deferred Investment Gain/(Loss)	(324,298)	(280,336)	(604,634)
2. Actuarial Value, June 30, 2015			
a. Fair Value, June 30, 2015	$ 8,606,862	$ 6,961,963	$ 15,568,825
b. 2015 Deferred Investment Gain/(Loss)	(324,298)	(280,336)	(604,634)
c. Actuarial Value, June 30, 2015 *(a. – b.)*	$ 8,931,160	$ 7,242,299	$ 16,173,459
3. Ratio of Actuarial Value of Assets to Fair Value of Assets	103.8%	104.0%	103.9%
4. Approximate Actuarial Value Investment Return Rate During FY15 Net of All Expenses	7.1%	6.9%	7.0%

The actuarial value of assets averages investment gains/losses, resulting in less volatility in the State Assistance contributions.

The return recognized of 7.0% was more than the actual market return of 2.9%. As the deferred investment loss of $605 million in item 1.k is recognized, contributions will trend upwards in the absence of returns in excess of 8% over the next few years.

The Actuarial Value of Assets is provided in Section 2 of the actuarial report.

Valuation Results

Actuarial Value of Assets ($000's) TRS

	Pension	Healthcare	Total
1. Deferral of Investment Gain/(Loss) for FY15			
a. Fair Value, June 30, 2014	$ 3,771,139	$ 2,248,135	$ 6,019,274
b. Contributions for FY15	1,744,580	364,449	2,109,029
c. Medicare Part D Subsidy	0	15,416	15,416
d. Benefit Payments for FY15	418,545	109,740	528,285
e. Actual Investment Return (net of expenses)	149,781	70,706	220,487
f. Expected Return Rate	8.00%	8.00%	8.00%
g. Expected Return - Weighted for Timing	369,401	192,338	561,739
h. Investment Gain/(Loss) for the Year (e. – g.)	(219,620)	(121,632)	(341,252)
i. Deferred Investment Gain/(Loss)	$ (175,696)	$ (97,306)	$ (273,002)
2. Actuarial Value, June 30, 2015			
a. Fair Value, June 30, 2015	$ 5,246,955	$ 2,588,966	$ 7,835,921
b. 2015 Deferred Investment Gain/(Loss)	(175,696)	(97,306)	(273,002)
c. Actuarial Value, June 30, 2015 (a. – b.)	$ 5,422,651	$ 2,686,272	$ 8,108,923
3. Ratio of Actuarial Value of Assets to Fair Value of Assets	103.3%	103.8%	103.5%
4. Approximate Actuarial Value Investment Return Rate During FY15 Net of All Expenses	7.3%	7.0%	7.2%

The actuarial value of assets averages investment gains/losses, resulting in less volatility in the State Assistance contributions.

The return recognized of 7.2% was more than the actual market return of 3.2%. As the deferred investment loss of $273 million in item 1.k is recognized, contributions will trend upwards in the absence of returns in excess of 8% over the next few years.

The Actuarial Value of Assets is provided in Section 2 of the actuarial report.

Valuation Results

Historical Asset Returns

PERS

Year Ending	Actuarial Value		Fair Value	
	Annual	Cumulative*	Annual	Cumulative
June 30, 2005	8.7%	8.7%	8.5%	8.5%
June 30, 2006	9.3%	9.0%	11.4%	9.9%
June 30, 2007	11.6%	9.9%	18.5%	12.7%
June 30, 2008	10.0%	9.9%	(3.1)%	8.5%
June 30, 2009	(7.3)%	6.2%	(20.5)%	2.0%
June 30, 2010	7.2%	6.4%	10.2%	3.3%
June 30, 2011	7.2%	6.5%	20.4%	5.6%
June 30, 2012	1.2%	5.8%	0.2%	4.9%
June 30, 2013	4.0%	5.6%	12.1%	5.7%
June 30, 2014	21.9%	7.1%	18.2%	6.9%
June 30, 2015	7.0%	7.1%	2.9%	6.5%

*Cumulative since FYE June 30, 2005.

The average investment return recognized for purposes of determining the annual change in contribution each year is the actuarial value of assets return.

Currently, the cumulative actuarial return of 7.1% tracks the average market return of 6.5% rather well. But, the range of returns under the actuarial value is markedly less than the fair value. Using the Actuarial Value of Assets results in much lower State Assistance contribution volatility versus Market Value of Assets, while ensuring that the actuarial needs of PERS are met.

The valuation assumes that the funds will earn a long-term asset return of 8%. This table provides a history of the Actuarial Value and Market Value of Asset returns.

Historical Asset Returns
TRS

Year Ending	Actuarial Value		Fair Value	
	Annual	Cumulative*	Annual	Cumulative
June 30, 2005	9.1%	9.1%	8.5%	8.5%
June 30, 2006	9.6%	9.3%	11.4%	9.9%
June 30, 2007	11.9%	10.2%	18.5%	12.7%
June 30, 2008	10.2%	10.2%	(3.0)%	8.6%
June 30, 2009	(7.9)%	6.3%	(21.0)%	1.9%
June 30, 2010	8.1%	6.6%	10.6%	3.3%
June 30, 2011	6.9%	6.6%	20.5%	5.6%
June 30, 2012	0.7%	5.9%	0.2%	4.9%
June 30, 2013	3.7%	5.6%	12.2%	5.7%
June 30, 2014	22.7%	7.2%	18.2%	6.9%
June 30, 2015	7.2%	7.2%	3.2%	6.5%

*Cumulative since FYE June 30, 2005.

The average investment return recognized for purposes of determining the annual change in contribution each year is the actuarial value of assets return.

Currently, the cumulative actuarial return of 7.2% tracks the average market return of 6.5% rather well. But, the range of returns under the actuarial value is markedly less than the fair value. Using the Actuarial Value of Assets results in much lower State Assistance contribution volatility versus Market Value of Assets, while ensuring that the actuarial needs of TRS are met.

The valuation assumes that the funds will earn a long-term asset return of 8%. This table provides a history of the Actuarial Value and Market Value of Asset returns.

Valuation Results

Funded Status

Funded Status as of June 30 ($'s in 000's)	PERS		TRS	
	2014	2015	2014	2015
DB - Pension				
a. Actuarial Accrued Liability	$ 12,947,759	$ 13,337,929	$ $6,921,362	$ $7,051,984
b. Valuation Assets	7,731,438	8,931,160	3,771,139	5,422,651
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	59.7%	67.0%	54.5%	76.9%
DB - Healthcare				
a. Actuarial Accrued Liability	$ 7,949,613	$ 7,350,183	$ $2,919,670	$ $2,677,381
b. Valuation Assets	6,913,160	7,242,299	2,248,135	2,686,272
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	87.0%	98.5%	77.0%	100.3%
DB - Total				
a. Actuarial Accrued Liability	$ 20,897,372	$ 20,688,112	$ $9,841,032	$ $9,729,365
b. Valuation Assets	14,644,598	16,173,459	6,019,274	8,108,923
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	70.1%	78.2%	61.2%	83.3%
DCR - Pension				
a. Actuarial Accrued Liability	$ 3,627	$ 5,309	$ $23	$ $29
b. Valuation Assets	14,995	19,014	2,820	3,114
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	413.4%	358.1%	12260.9%	10737.9%
DCR - Healthcare				
a. Actuarial Accrued Liability	$ 50,217	$ 58,683	$ $16,273	$ $19,768
b. Valuation Assets	26,466	44,188	10,791	17,733
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	52.7%	75.3%	66.3%	89.7%
DCR - Total				
a. Actuarial Accrued Liability	$ 53,844	$ 63,992	$ $16,296	$ $19,797
b. Valuation Assets	41,461	63,202	13,611	20,847
c. Funded Ratio based on Valuation Assets, *(b) ÷ (a)*	77.0%	98.8%	83.5%	105.3%

The funded ratios are different when the fair value of assets is used

The Funded Status is the ratio of the actuarial value of assets to the actuarial accrued liability.

The Funded Status improved during FY 15 primarily due to the additional State Assistance contributions. For the healthcare funds, the Funded Status also improved during FY15 due to claims experience that was better than expected.

A detailed summary of the AAL is provided in Section 1 of the actuarial reports. A detailed summary of the AVA is provided in Section 2 of the actuarial reports.

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Valuation Results

Actuarial Accrued Liability (Gain)/Loss ($000's)

	PERS			TRS		
	Pension	Healthcare	Total	Pension	Healthcare	Total
Demographic Experience						
- Retirement	3,813	(2,568)	1,245	101	90	191
- Termination	2,435	12,263	14,698	10,284	2,923	13,207
- Mortality (actives)	(9,355)	1,388	(7,967)	(3,820)	146	(3,674)
- Mortality (inactives)	(25,209)	(36,291)	(61,500)	(4,964)	(22,616)	(27,580)
- Disability	2,073	2,927	5,000	407	660	1,067
Rehires	21,255	9,547	30,802	11,622	202	11,824
Salary Increases	(91,053)	0	(91,053)	(25,558)	0	(25,558)
COLA/PRPA Increases	(67,117)	0	(67,117)	(46,292)	0	(46,292)
Medical Claims Experience	0	(884,823)	(884,823)	0	(311,407)	(311,407)
Programming Changes						
- Optional Forms	28,663	0	28,663	0	0	0
- QDRO benefits	0	(46,007)	(46,007)	0	(14,194)	(14,194)
- SSLIO benefits	0	(11,249)	(11,249)	0	0	0
- Retirement Rates	(65)	30	(35)	0	0	0
Miscellaneous & Data Changes	15,613	9,310	24,923	2,799	(38,689)	(35,890)
Total	(118,947)	(945,473)	(1,064,420)	(55,421)	(382,885)	(438,306)
Actuarial Accrued Liability (AAL)	13,337,929	7,350,183	20,688,112	7,051,984	2,677,381	9,729,365
Total Gain/Loss as % of AAL	0.89%	12.86%	5.15%	0.79%	14.30%	4.50%

The actuarial accrued liability gain of $1,064 million for PERS and $438 million for TRS means that the actuarial accrued liability was $1,064 and $438 million lower than we would have expected based on the assumptions.

While other demographic experience did play a role in this "gain", the primary driver was claims experience for the healthcare plans.

The AAL gain/loss is provided in the Executive Summary of the actuarial reports.

Valuation Results

Medical Claims Experience Gains

- Healthcare gains were major contributor to increase in funded status
- Key reasons for gains
  - Higher Aetna discounts vs. estimated discounts built into per capita costs
  - Improved claims processing has created a margin in per capita costs
  - Margins for adverse deviation built into per capita costs haven't materialized
  - Premium recovery payments increased plan assets
  - Rebates
    - New administrator led to rebates of approximately 4.5% of FY15 benefit payments
    - We worked with AK staff to reconcile historical rebates
  - One-time special reimbursement under Affordable Care Act increased plan assets

The healthcare experience and methodology are described in Section 6.2 of the actuarial reports.

Valuation Results

Medical Claims Experience Gains (cont'd)

- Are the recent gains expected to continue?
  - Yes, but future gains not expected to be as large as in FY15
  - Use of weighted average of four years' of claims experience to reduce contribution volatility is expected to lead to further smaller gains
  - If more recent years had been given more weight, gains would have been even larger
  - FY15 vs. FY14 experience produces gains, but not to same extent

The healthcare experience and methodology are described in Section 6.2 of the actuarial reports.

Valuation Results

Employer/State Contribution Rates

	PERS		TRS	
	FY17	FY18	FY17	FY18
DB Plan Costs				
- Normal Cost Rate	9.60%	8.53%	9.68%	8.65%
- Past Service Rate	16.02%	13.63%	18.77%	15.10%
- Total Actuarial Rate	25.62%	22.16%	28.45%	23.75%
DCR Plan Costs (based on 2014 valuations)				
- Normal Cost Rate	4.30%	4.66%	4.57%	5.03%
- Past Service Rate	0.06%	0.06%	0.05%	0.06%
- Total Actuarial Rate	4.36%	4.72%	4.62%	5.09%
Total Plan Costs				
- Normal Cost Rate	13.90%	13.19%	14.25%	13.68%
- Past Service Rate	16.08%	13.69%	18.82%	15.16%
- Total Actuarial Rate	29.98%	26.88%	33.07%	28.84%
Sources of Contributions				
- Total Actuarial Rate	29.98%	26.88%	33.07%	28.84%
- Less Member Contributions	-3.84%	-3.44%	-5.05%	-4.66%
- Total Employer Actuarial Rate	26.14%	23.44%	28.02%	24.18%
- Less Employer Contribution Cap	-22.00%	-22.00%	-12.56%	-12.56%
- State Assistance Contribution Rate	4.14%	1.44%	15.46%	11.62%

All contribution rates are expressed as a % of total (DB and DCR) payroll.

FY17 is based on June 30, 2014 valuation. FY18 is based on June 30, 2015 valuation. Two-year roll-forward with 0% population growth used in both years.

The reduction in contribution rates between FY17 and FY18 is primarily due to healthcare claims experience. The impact of additional State Assistance contributions during FY15 is reflected in both FY17 and FY18 results.

The contribution rates are provided in the Comparative Summary of Key Actuarial Valuation Results in the actuarial reports.

Valuation Results

DCR plans ($000's)

	PERS DCR			TRS DCR		
	Occ D&D	Ret Med	Total	Occ D&D	Ret Med	Total
Actuarial Accrued Liability	$5,309	$58,683	$63,992	$29	$19,768	$19,797
Actuarial Value of Assets	$19,014	$44,188	$63,202	$3,114	$17,733	$20,847
Unfunded Actuarial Accrued Liability	($13,705)	$14,495	$790	($3,085)	$2,035	($1,050)
Funded Ratio	358.1%	75.3%	98.8%	10737.9%	89.7%	105.3%
Employer Contribution						
- Normal Cost	$2,842	$8,801	$11,643	$203	$2,326	$2,529
- Amortization of Unfunded Liability	($934)	$1,055	$121	($203)	$165	($38)
- Total	$1,908	$9,856	$11,764	$0	$2,491	$2,491
Employer Contribution as % of DCR Payroll						
- Normal Cost	0.30%	0.92%	1.22%	0.07%	0.85%	0.92%
- Amortization of Unfunded Liability	-0.10%	0.11%	0.01%	-0.07%	0.06%	-0.01%
- Total	0.20%	1.03%	1.23%	0.00%	0.91%	0.91%
Employer Contribution as % of DB/DCR Payroll						
- Normal Cost	0.12%	0.39%	0.51%	0.03%	0.31%	0.34%
- Amortization of Unfunded Liability	-0.04%	0.05%	0.01%	-0.03%	0.02%	-0.01%
- Total	0.08%	0.44%	0.52%	0.00%	0.33%	0.33%

Valuation Results
Projections

PERS

FY 16 Investment Return8.00%

Investment Return of 8.00% for FY 17 and beyond.

Fiscal Year End	Valuation Amounts on July 1 (Beginning of Fiscal Year): Actuarial Assets	Accrued Liability	Funding Ratio	Surplus (Deficit)	Flow Amounts During Following 12 Months: Total Salaries	Er/State Ctb Rate	DCR Ctb Rate	Total Ctb Rate	Employer	State	Employee	Total	Benefit Payments	Net Contribs	Investment Earnings	Deferred Asset Gain/(Loss)	Ending Actuarial Assets
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------
2016	$16,173,459	$20,688,112	78.2%	($4,514,653)	$2,281,060	22.94%	4.61%	27.55%	$396,676	$126,520	$99,708	$622,904	$1,154,510	($531,606)	$1,223,352	($453,476)	$16,714,047
2017	16,714,047	21,396,077	78.1%	(4,682,029)	2,343,538	21.88%	4.36%	26.24%	413,634	99,166	95,756	608,556	1,233,001	(624,445)	1,276,276	(302,317)	17,214,719
2018	17,214,719	22,061,253	78.0%	(4,846,534)	2,410,994	18.72%	4.72%	23.44%	416,620	34,718	91,802	543,140	1,309,546	(766,406)	1,319,970	(151,159)	17,617,125
2019	17,617,125	22,707,675	77.6%	(5,090,550)	2,481,805	18.85%	5.09%	23.94%	419,673	48,147	87,983	555,803	1,385,206	(829,403)	1,362,079	0	17,998,642
2020	17,998,642	23,294,878	77.3%	(5,296,236)	2,555,313	18.94%	5.44%	24.38%	423,160	60,817	84,100	568,077	1,460,336	(892,259)	1,402,493	0	18,508,876
2021	18,508,876	23,836,176	77.7%	(5,327,300)	2,631,109	18.62%	5.77%	24.39%	427,029	62,883	80,340	570,252	1,535,417	(965,165)	1,440,285	0	18,983,995
2022	18,983,995	24,328,894	78.0%	(5,344,899)	2,711,488	18.34%	6.09%	24.43%	431,398	65,889	76,539	573,826	1,612,726	(1,038,900)	1,475,266	0	19,420,362
2023	19,420,362	24,767,570	78.4%	(5,347,208)	2,794,017	18.10%	6.40%	24.50%	435,867	69,851	72,635	578,353	1,689,949	(1,111,596)	1,507,227	0	19,815,993
2024	19,815,993	25,147,993	78.8%	(5,332,000)	2,879,779	17.90%	6.69%	24.59%	440,894	74,586	68,910	584,390	1,764,918	(1,180,528)	1,536,117	0	20,171,582
2025	20,171,582	25,468,830	79.2%	(5,297,248)	2,968,351	17.72%	6.96%	24.68%	446,440	79,551	53,511	579,502	1,838,613	(1,259,111)	1,561,437	0	20,473,908
2026	20,473,908	25,726,951	79.6%	(5,253,043)	3,060,673	17.63%	7.21%	24.84%	452,674	86,923	49,232	588,829	1,898,110	(1,309,281)	1,583,757	0	20,748,384
2027	20,748,384	25,920,281	80.0%	(5,171,897)	3,160,652	17.49%	7.44%	24.93%	460,191	92,607	45,303	598,101	1,966,536	(1,368,435)	1,603,398	0	20,983,347
2028	20,983,347	26,046,267	80.6%	(5,062,920)	3,262,922	17.39%	7.66%	25.05%	467,903	99,519	41,679	609,101	2,033,717	(1,424,616)	1,620,048	0	21,178,779
2029	21,178,779	26,102,014	81.1%	(4,923,235)	3,368,800	17.33%	7.86%	25.19%	476,348	107,465	37,867	621,680	2,098,381	(1,476,701)	1,633,748	0	21,335,826
2030	21,335,826	26,084,879	81.8%	(4,749,053)	3,478,335	17.29%	8.05%	25.34%	485,228	116,176	34,163	635,567	2,160,075	(1,524,508)	1,644,585	0	21,455,904
2031	21,455,904	25,992,659	82.5%	(4,536,755)	3,592,642	17.27%	8.22%	25.49%	495,066	125,383	30,954	651,403	2,220,676	(1,569,273)	1,652,608	0	21,539,239
2032	21,539,239	25,820,860	83.4%	(4,281,621)	3,711,298	17.27%	8.38%	25.65%	505,479	135,462	27,635	668,576	2,277,121	(1,608,545)	1,657,957	0	21,588,651
2033	21,588,651	25,569,489	84.4%	(3,980,838)	3,832,702	17.29%	8.52%	25.81%	516,648	146,027	24,485	687,160	2,329,169	(1,642,009)	1,660,854	0	21,607,497
2034	21,607,497	25,236,192	85.6%	(3,628,695)	3,960,305	17.36%	8.65%	26.01%	528,701	158,808	21,554	709,063	2,372,980	(1,663,917)	1,661,877	0	21,605,457
2035	21,605,457	24,823,720	87.0%	(3,218,263)	4,094,196	17.42%	8.77%	26.19%	541,662	171,547	18,550	731,759	2,410,102	(1,678,343)	1,661,544	0	21,588,657
2036	21,588,657	24,333,089	88.7%	(2,744,432)	4,234,254	17.53%	8.88%	26.41%	555,534	186,730	15,749	758,013	2,440,956	(1,682,943)	1,660,535	0	21,566,250
2037	21,566,250	23,764,886	90.7%	(2,198,636)	4,387,749	17.64%	8.98%	26.62%	571,285	202,714	13,247	787,246	2,463,847	(1,676,601)	1,659,567	0	21,549,215
2038	21,549,215	23,123,142	93.2%	(1,573,927)	4,546,100	17.86%	9.06%	26.92%	588,265	223,668	10,996	822,929	2,474,785	(1,651,856)	1,659,992	0	21,557,352
2039	21,557,352	22,414,057	96.2%	(856,705)	4,711,692	18.55%	9.13%	27.68%	606,395	267,624	9,095	883,114	2,475,998	(1,592,884)	1,664,745	0	21,629,213
2040	21,629,213	21,642,924	99.9%	(13,711)	4,884,747	0.58%	9.19%	9.77%	28,331	0	7,474	35,805	2,463,285	(2,427,480)	1,626,884	0	20,828,616
2041	20,828,616	20,820,013	100.0%	8,603	5,065,731	0.08%	9.23%	9.31%	4,052	0	5,842	9,894	2,441,004	(2,431,110)	1,562,768	0	19,960,274
2042	19,960,274	19,951,563	100.0%	8,711	5,254,277	0.06%	9.27%	9.33%	3,153	0	5,008	8,161	2,406,307	(2,398,146)	1,494,710	0	19,056,838
2043	19,056,838	19,047,438	100.0%	9,400	5,446,533	0.05%	9.29%	9.34%	2,724	0	3,621	6,345	2,360,682	(2,354,337)	1,424,306	0	18,126,807
2044	18,126,807	18,116,556	100.0%	10,251	5,646,847	0.03%	9.32%	9.35%	1,694	0	3,189	4,883	2,300,997	(2,296,114)	1,352,386	0	17,183,079
2045	17,183,079	17,171,749	100.0%	11,330	5,853,492	0.03%	9.33%	9.36%	1,756	0	2,204	3,960	2,232,901	(2,228,941)	1,279,751	0	16,233,889
								Totals:	$11,544,479	$2,842,782	$1,219,131	$15,606,392					

Projections are provided in Section 4 of the valuation report.

Valuation Results

Projections

TRS

FY 16 Investment Return8.00%   Investment Return of 8.00% for FY 17 and beyond.

	Valuation Amounts on July 1 (Beginning of Fiscal Year)				Flow Amounts During Following 12 Months											Deferred	Ending
Fiscal Year End	Actuarial Assets	Accrued Liability	Funding Ratio	Surplus (Deficit)	Total Salaries	Er/State Ctb Rate	DCR Ctb Rate	Total Ctb Rate	Employer	State	Employee	Total	Benefit Payments	Net Contribs	Investment Earnings	Asset Gain/(Loss)	Actuarial Assets
2016	$8,108,923	$9,729,365	83.3%	($1,620,442)	$748,626	25.15%	4.79%	29.94%	$58,168	$130,109	$45,084	$233,361	$588,213	($354,852)	$613,616	($204,751)	$8,299,436
2017	8,299,436	9,978,438	83.2%	(1,679,002)	766,651	23.16%	4.62%	27.78%	60,872	116,700	43,111	220,683	617,975	(397,292)	634,684	(136,501)	8,468,578
2018	8,468,578	10,211,044	82.9%	(1,742,466)	785,912	19.09%	5.09%	24.18%	58,708	91,323	41,057	191,088	646,288	(455,200)	650,274	(68,250)	8,595,401
2019	8,595,401	10,437,144	82.4%	(1,841,743)	806,252	19.53%	5.60%	25.13%	56,115	101,346	39,059	196,520	674,776	(478,256)	665,289	0	8,714,185
2020	8,714,185	10,640,670	81.9%	(1,926,485)	827,595	19.95%	6.07%	26.02%	53,711	111,394	37,117	202,222	702,922	(500,700)	679,687	0	8,893,172
2021	8,893,172	10,826,430	82.1%	(1,933,258)	849,657	19.77%	6.53%	26.30%	51,234	116,743	35,137	203,114	731,426	(528,312)	693,046	0	9,057,906
2022	9,057,906	10,992,773	82.4%	(1,934,867)	872,298	19.62%	6.97%	26.59%	48,761	122,384	33,200	204,345	760,382	(556,037)	705,270	0	9,207,139
2023	9,207,139	11,137,595	82.7%	(1,930,456)	895,774	19.50%	7.38%	26.88%	46,401	128,275	31,233	205,909	788,122	(582,213)	716,330	0	9,341,256
2024	9,341,256	11,260,559	83.0%	(1,919,303)	920,082	19.39%	7.78%	27.17%	43,980	134,424	29,326	207,730	816,300	(608,570)	726,182	0	9,458,868
2025	9,458,868	11,360,063	83.3%	(1,901,195)	945,355	19.30%	8.16%	27.46%	41,596	140,858	21,460	203,914	845,457	(641,543)	734,462	0	9,551,787
2026	9,551,787	11,433,499	83.5%	(1,881,712)	971,728	19.29%	8.51%	27.80%	39,355	148,091	19,337	206,783	866,785	(660,002)	741,395	0	9,633,180
2027	9,633,180	11,480,289	83.9%	(1,847,109)	999,484	19.22%	8.85%	28.07%	37,081	155,019	17,291	209,391	893,544	(684,153)	747,152	0	9,696,179
2028	9,696,179	11,498,303	84.3%	(1,802,124)	1,028,624	19.17%	9.15%	28.32%	35,076	162,111	15,326	212,513	920,955	(708,442)	751,437	0	9,739,174
2029	9,739,174	11,485,636	84.8%	(1,746,462)	1,059,277	19.14%	9.43%	28.57%	33,155	169,591	13,453	216,199	947,569	(731,370)	754,193	0	9,761,998
2030	9,761,998	11,440,484	85.3%	(1,678,486)	1,091,279	19.12%	9.68%	28.80%	31,429	177,224	11,677	220,330	972,441	(752,111)	755,434	0	9,765,320
2031	9,765,320	11,362,486	85.9%	(1,597,166)	1,124,965	19.10%	9.90%	29.00%	29,924	184,944	10,125	224,993	994,613	(769,620)	755,253	0	9,750,953
2032	9,750,953	11,252,900	86.7%	(1,501,947)	1,160,319	19.10%	10.09%	29.19%	28,660	192,961	8,702	230,323	1,013,789	(783,466)	753,824	0	9,721,311
2033	9,721,311	11,112,155	87.5%	(1,390,844)	1,197,206	19.11%	10.26%	29.37%	27,536	201,250	7,423	236,209	1,031,707	(795,498)	751,258	0	9,677,071
2034	9,677,071	10,939,126	88.5%	(1,262,055)	1,235,964	19.14%	10.40%	29.54%	26,697	209,866	6,303	242,866	1,043,869	(801,003)	747,814	0	9,623,882
2035	9,623,882	10,737,503	89.6%	(1,113,621)	1,276,602	19.17%	10.53%	29.70%	25,915	218,810	5,234	249,959	1,051,378	(801,419)	743,882	0	9,566,345
2036	9,566,345	10,510,003	91.0%	(943,658)	1,319,177	19.20%	10.63%	29.83%	25,460	227,822	4,353	257,635	1,056,351	(798,716)	739,736	0	9,507,365
2037	9,507,365	10,257,502	92.7%	(750,137)	1,363,505	19.26%	10.71%	29.97%	25,225	237,386	3,545	266,156	1,057,603	(791,447)	735,688	0	9,451,606
2038	9,451,606	9,982,098	94.7%	(530,492)	1,409,369	19.33%	10.78%	30.11%	25,087	247,344	2,960	275,391	1,054,509	(779,118)	732,128	0	9,404,616
2039	9,404,616	9,686,683	97.1%	(282,067)	1,456,857	20.07%	10.84%	30.91%	25,058	267,333	2,331	294,722	1,049,321	(754,599)	730,163	0	9,380,179
2040	9,380,179	9,372,009	100.0%	8,170	1,505,788	0.07%	10.89%	10.96%	1,054	0	1,958	3,012	1,040,362	(1,037,350)	706,246	0	9,049,075
2041	9,049,075	9,040,645	100.0%	8,430	1,556,462	0.05%	10.92%	10.97%	778	0	1,556	2,334	1,026,301	(1,023,967)	680,330	0	8,705,438
2042	8,705,438	8,696,685	100.0%	8,753	1,608,668	0.04%	10.95%	10.99%	644	0	1,287	1,931	1,008,439	(1,006,508)	653,583	0	8,352,513
2043	8,352,513	8,343,218	100.0%	9,295	1,662,146	0.03%	10.98%	11.01%	498	0	997	1,495	985,450	(983,955)	626,311	0	7,994,869
2044	7,994,869	7,984,908	100.0%	9,961	1,717,504	0.03%	10.99%	11.02%	516	0	687	1,203	958,888	(957,685)	598,818	0	7,636,003
2045	7,636,003	7,625,190	100.0%	10,813	1,774,509	0.02%	11.01%	11.03%	354	0	532	886	929,806	(928,920)	571,335	0	7,278,417
							Totals:		$939,047	$3,993,308	$490,861	$5,423,217					

Projections are provided in Section 4 of the valuation report.

Preliminary Key Observations from FY15 Valuations

(Repeated from earlier)

The actuarial valuation is done each year to refine the estimates the actuary developed in the prior valuation and reflect the actual events that occurred. This past year, as is common, events happened that were either not anticipated or were different from expected and materially impacted the results:

- More significant events causing an impact:
  - Large State Assistance contribution made during FY15
  - Retiree medical claims were less than expected
- Less significant, yet still material events causing an impact:
  - FY15 investment return was less than the assumed return of 8%
  - Salary increases were less than expected
  - Lower Post Retirement Pension Adjustments (PRPA) than expected
  - More deaths than expected
  - Valuation process refinements

Certification

The data, assumptions, methods, and plan provisions used in the results shown in this presentation were provided in the draft June 30, 2015 actuarial valuation reports of the PERS and TRS DB and DCR Systems.

The results were prepared under the direction of Larry Langer and David Kershner who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. These results have been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about them. Melissa Bissett is responsible for all assumptions related to the average annual per capita health claims cost and the health care cost trend rates, and hereby affirms her qualification to render opinions in such matters, in accordance with the Qualification Standards of the American Academy of Actuaries.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law.

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Changes to be Reflected in Final 2015 Valuations

buckconsultants

xerox

Changes to be Reflected in Final 2015 Valuations

- Programming Changes (will have minimal effects on valuation results)
  - TRS - 5% assumption for those assumed to withdraw balances upon member's death
  - PERS and TRS – PRPA COLA increase
- Valuation Report Changes
  - Certain actuarial assumptions to be disclosed
  - Cadillac Tax dollar amount to be estimated and added
  - Other minor wording changes
- Other items to be discussed with Staff and Actuarial Committee
  - Use of pension data as proxy for retiree medical data
  - Confirmation of DCR retiree medical plan design
  - Occupational disability retirement benefit commencement
  - Application of GASB 67 to Occupational Death & Disability benefits

We anticipate this list will change based on discussions during the April 20 actuarial committee meeting.

Potential Impact of SB 207 and SB 209

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Potential Impact of SB 207 and SB 209 – Projected Employer/State Contributions for FY17-FY39 ($000's)

	PERS			TRS		
	Current	SB 209	Change	Current	SB 207	Change
Employer DB	11,106,094	13,701,588	2,595,494	877,036	3,130,210	2,253,174
Employer DCR	5,873,459	5,873,459	0	2,183,073	2,183,073	0
State Assistance	2,716,260	120,735	(2,595,525)	3,863,199	1,610,008	(2,253,191)
Total	19,695,813	19,695,782	(31)	6,923,308	6,923,291	(17)

* Based on preliminary valuation results

SB 207 and SB 209 provide a shift in contribution requirements from the State to the Employers by increasing the Employer caps. Because it is a shift, the projected funded status in the future is unaffected by SB 207/209.

Questions?

THANK YOU

Hancock Agricultural Investment Group

Mandate: **Farmland Separate Account** **Hired: 2004**

Firm Information	Investment Approach	Total ARMB Mandate
The Hancock Agricultural Investment Group (HAIG) is an operating division of the Hancock Natural Resource Group, an indirect, wholly-owned subsidiary of Manulife Financial Corporation. Manulife is a leading financial services group headquartered in Toronto, Canada and operates in the United States primarily under the brand name "John Hancock." As of 12/31/2015, HAIG's total assets under management were $2.7 billion. **Key Executives:** ***Oliver Williams***, President ***Debra Goundrey,*** Director of Client Account Management	Investment decisions are made as a team and in conjunction with property managers in the field. Investments are modeled after initial due diligence to determine possible purchase price and quality of the asset. The process is a collaborative effort between portfolio management, acquisitions and asset management and includes vetting the initial investment to see if the property is an attractive asset based on soil type, water availability, yield history, location, commodity type and return potential. The investment is then evaluated for portfolio requirements: diversification, size, return hurdles, and risk/reward profiles. Fundamental and quantitative commodity research underlies the investment decision – both top-down and bottom-up approaches are used. The two most important criteria are soil quality and water supply – if these criteria are not met, the property is not considered. Due diligence includes extensive research on the property, seller, and all aspects of the transaction including external environmental audits. The type of crop grown, location and size are also central components of the purchase decision. **Benchmark:** Leased only properties in the NCREIF Farmland Index weighted 80% row and 20% permanent crop.	Assets Under Management: 12/31/2015: $247,969,678

Concerns: Manager has underperformed the benchmark.

12/31/2015 Performance

	Last Quarter	1-Year	3-Years Annualized	5-Years Annualized
Manager (gross)	1.09%	5.55%	7.84%	9.33%
Fee	0.20%	0.86%	0.86%	0.88%
Manager (net)	0.89%	4.69%	6.98%	8.45%
Benchmark	1.38%	6.17%	9.89%	12.34%

Northern Agriculture: Portfolio Review

April 21, 2016

Oliver Williams IV, CFA
President
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Hancock Agricultural Investment Group®
A Manulife Asset Management Company

Table of Contents

Demand Drivers of Agriculture

Hancock Agricultural Investment Group®
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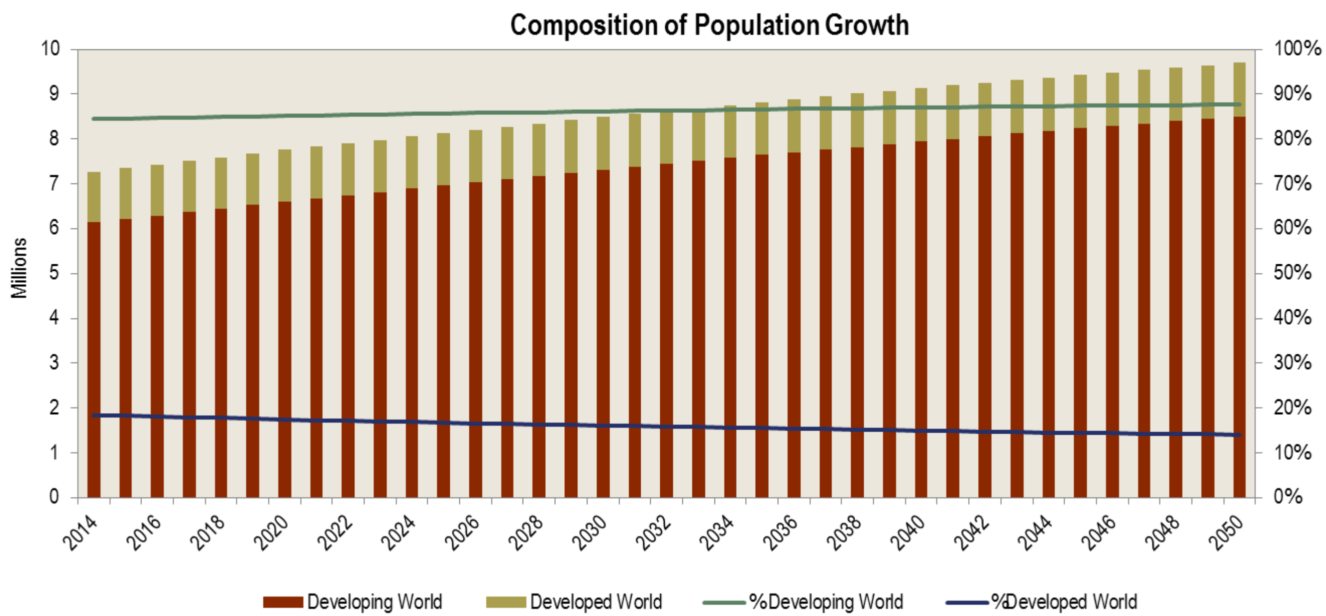
- Growing world population from 7.3 billion in 2014 projected to reach 9.7 billion in 2050
- Increasing Gross Domestic Product (GDP) per capita
  - GDP is projected to grow 1.7-fold by 2030; per capita income is projected to grow 1.5-fold by 2030
  - Correlation between GDP per capita and agricultural consumption (1990-2014)

    0.95 row crops   0.96 fruits   0.97 tree nuts



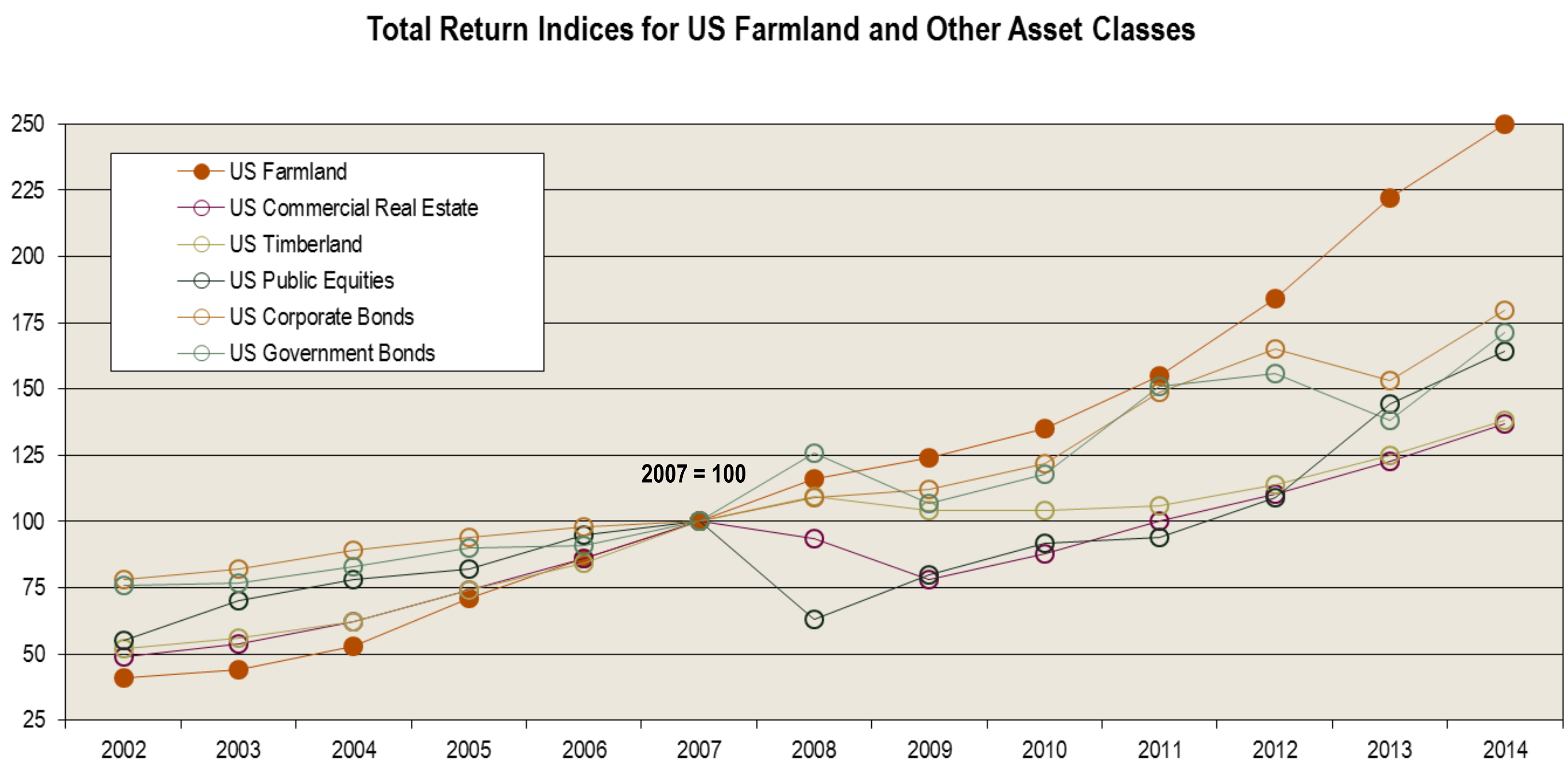
Source: UN Population Division, CAGR 0.8% (2014-2050)

- Growth in biofuel consumption
  - Mandates in 60 countries including US, EU and South America to increase use

Strong Returns for US Farmland

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

- Farmland has outperformed other investments both pre- and post- Global Financial Crisis



Sources: Indices for farmland, timberland, and commercial property calculated from NCREIF (2014 values are estimates). Indices for S&P 500 stocks, corporate bonds, and government bonds calculated from Morningstar.

Northern Agriculture Account

Investment Policy and Guidelines

Hancock Agricultural Investment Group®
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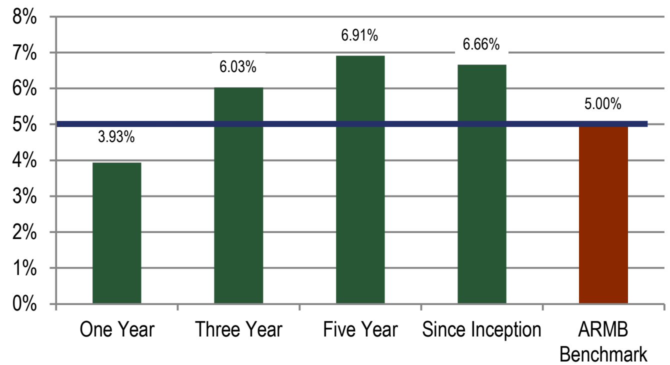
- Account established June 2005
- $245.3 million farmland allocation
- Investment objectives
  - Attain the optimum return on the portfolio, consistent with the assumption of prudent risk and safety of principal
- Investment guidelines
  - 80% (+/- 10%) row crops, 20% (+/-10%) permanent crops
  - No more than 40% of the total allocation invested within the same NCREIF region
  - No more than 30% of the total allocation invested within the same commodity
- Portfolio as of December 31, 2015
  - $165.8 million of committed capital
  - 23 highly diversified properties
  - $79.2 million remaining for investment

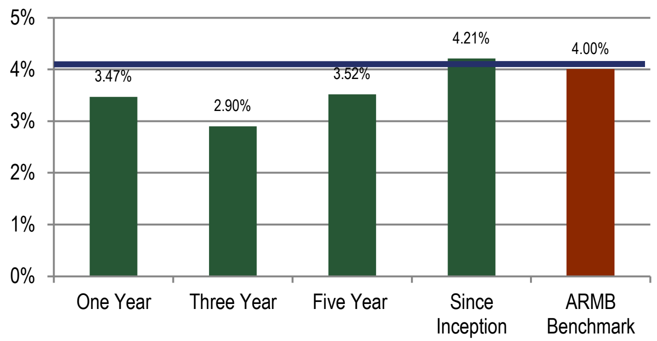
Northern Agriculture Account

Investment Objectives and Performance

- Total return
  - Over rolling five year periods, the portfolio is expected to generate a minimum total real rate of return (net of investment management fees) of 5.0% using a time-weighted rate of return calculation

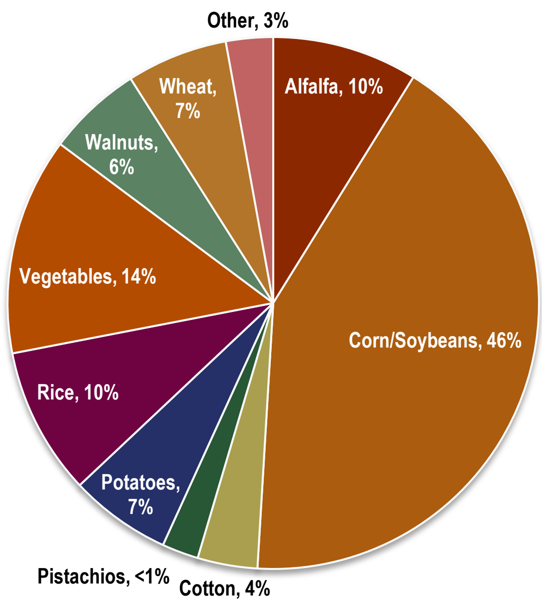


- Income return
  - Income, defined as cash distributed to ARMB, is expected to produce 4.0% returns over rolling five-year periods with a minimum of 3.0% distributed income for individual properties after fees and projected capital expenditures

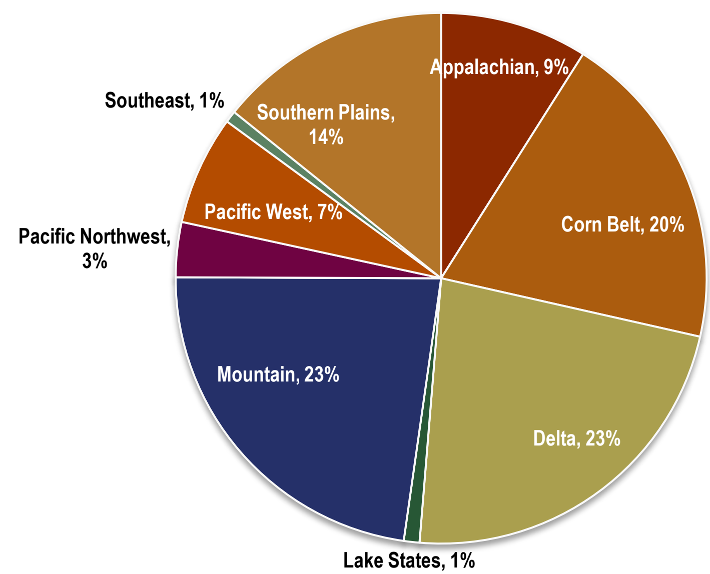


Northern Agriculture Portfolio
Portfolio Diversification

Crop Diversification
By Market Value as of 12/31/2015



Regional Diversification
By Market Value as of 12/31/2015



- 93% row crops, 7% permanent crops
- 9+ Commodities

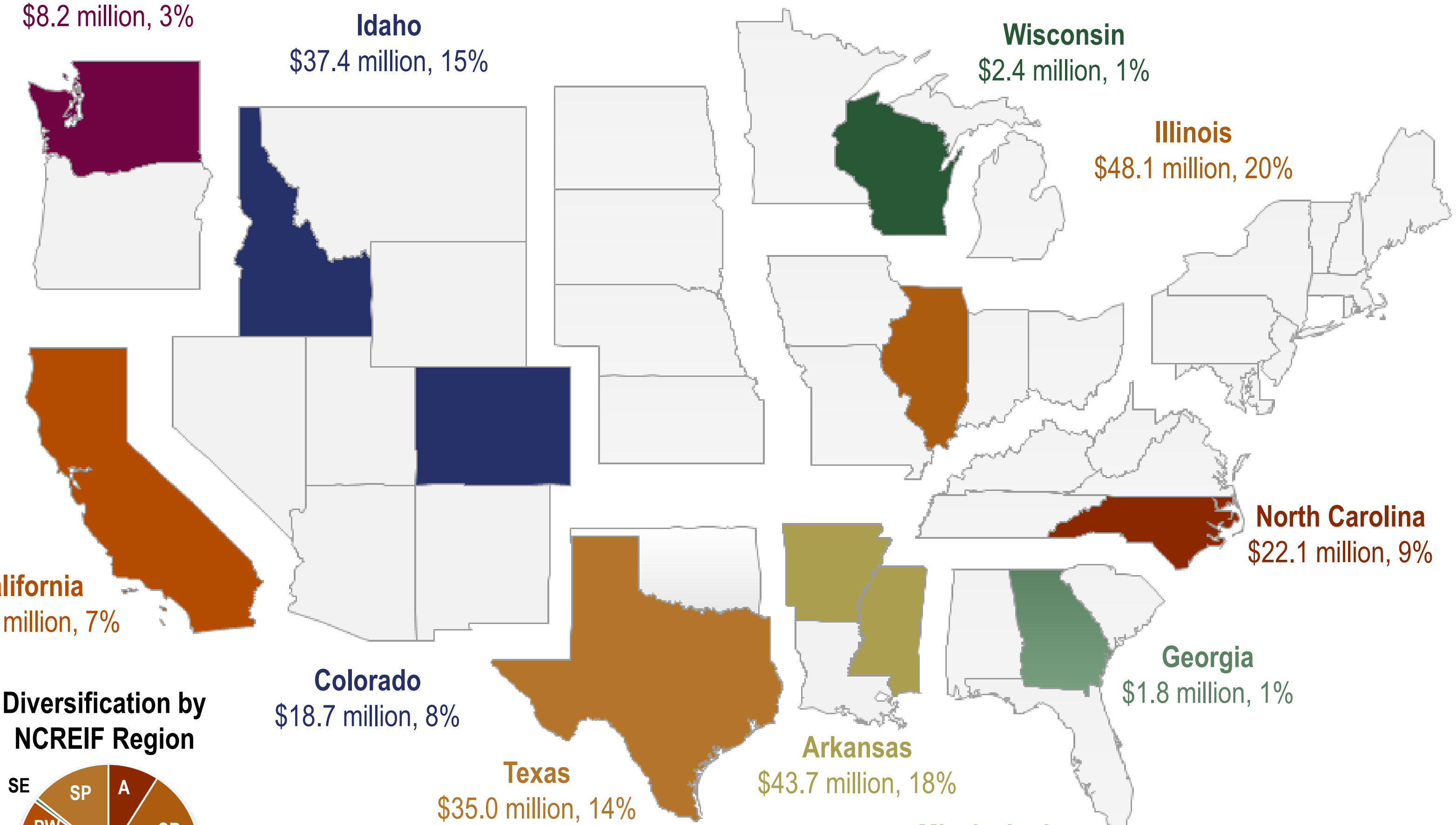
- 9 NCREIF Regions
- 11 States

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

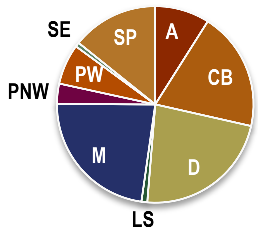
Northern Agriculture Portfolio

Portfolio Diversification

$246.1 Million Farmland Portfolio as of December 31, 2015



Diversification by NCREIF Region



Percentages and market values have been rounded and therefore may not sum to total.

Northern Agriculture Portfolio

Portfolio Summary

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

Northern Agriculture Account

	Six months ended December 31, 2015	Six months ended December 31, 2014
Net assets:	$247,969,678	$222,607,982
Net investment income, before fees:	$5,448,001	$4,441,940
Distributions:	$1,520,000	$2,580,799
Contributions:	-	-
Total return, before fees:	2.23%	1.93%
Total return, after fees:	1.81%	1.51%

Northern Agriculture Portfolio

	Six months ended December 31, 2015	Six months ended December 31, 2014
Total market value of farmland real estate:	$246,141,616	$219,891,146
Total invested capital:	$162,266,149	$138,833,930
Property count:	23	22
Total acres:	57,622	53,219
States represented:	11	10
Major crops grown:	9	9
Acquisitions:*	0	0
Disposals:	0	0

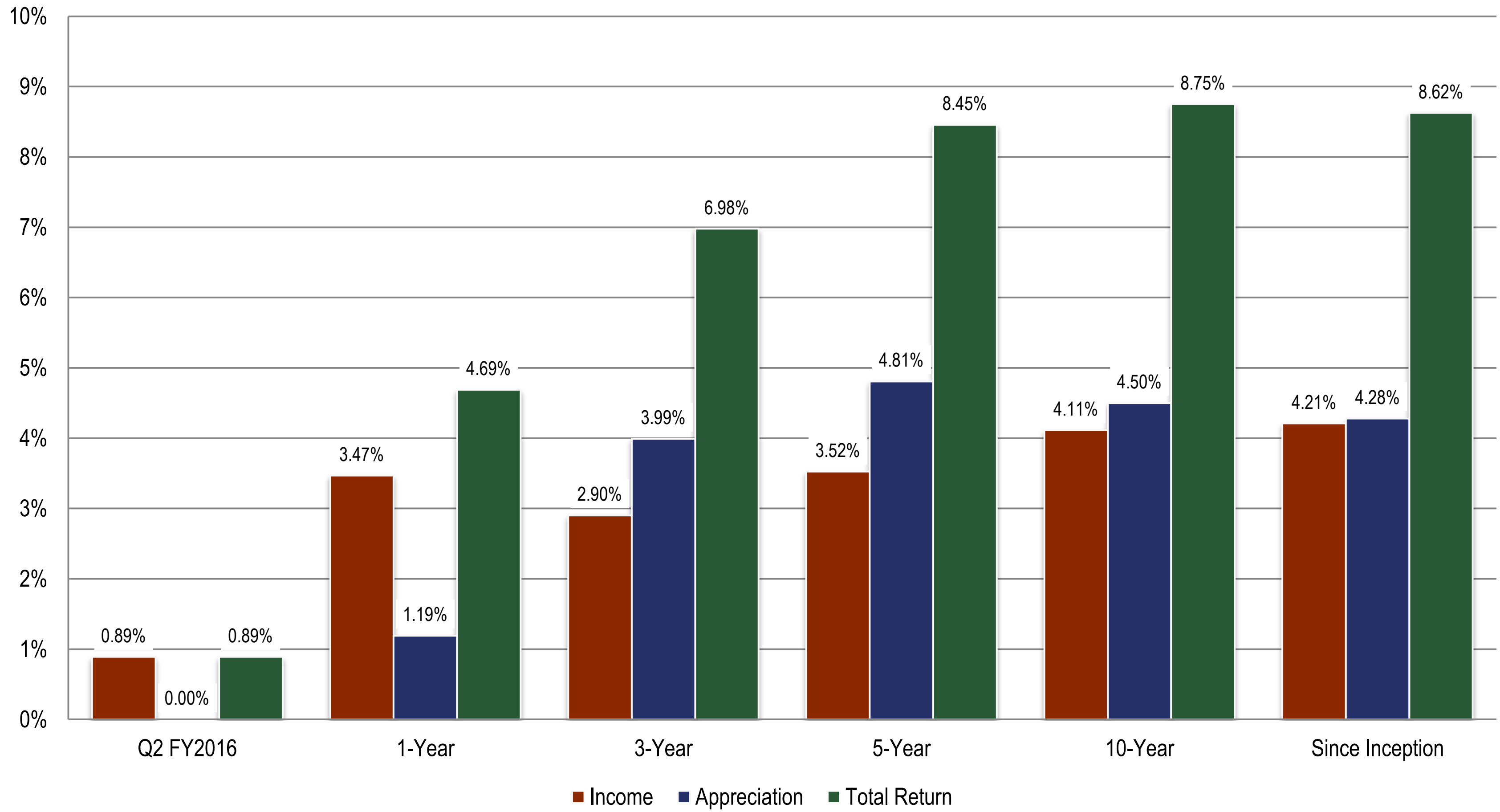
*North Carolina row crop property acquired February 2015

Northern Agriculture Portfolio

Portfolio Performance

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

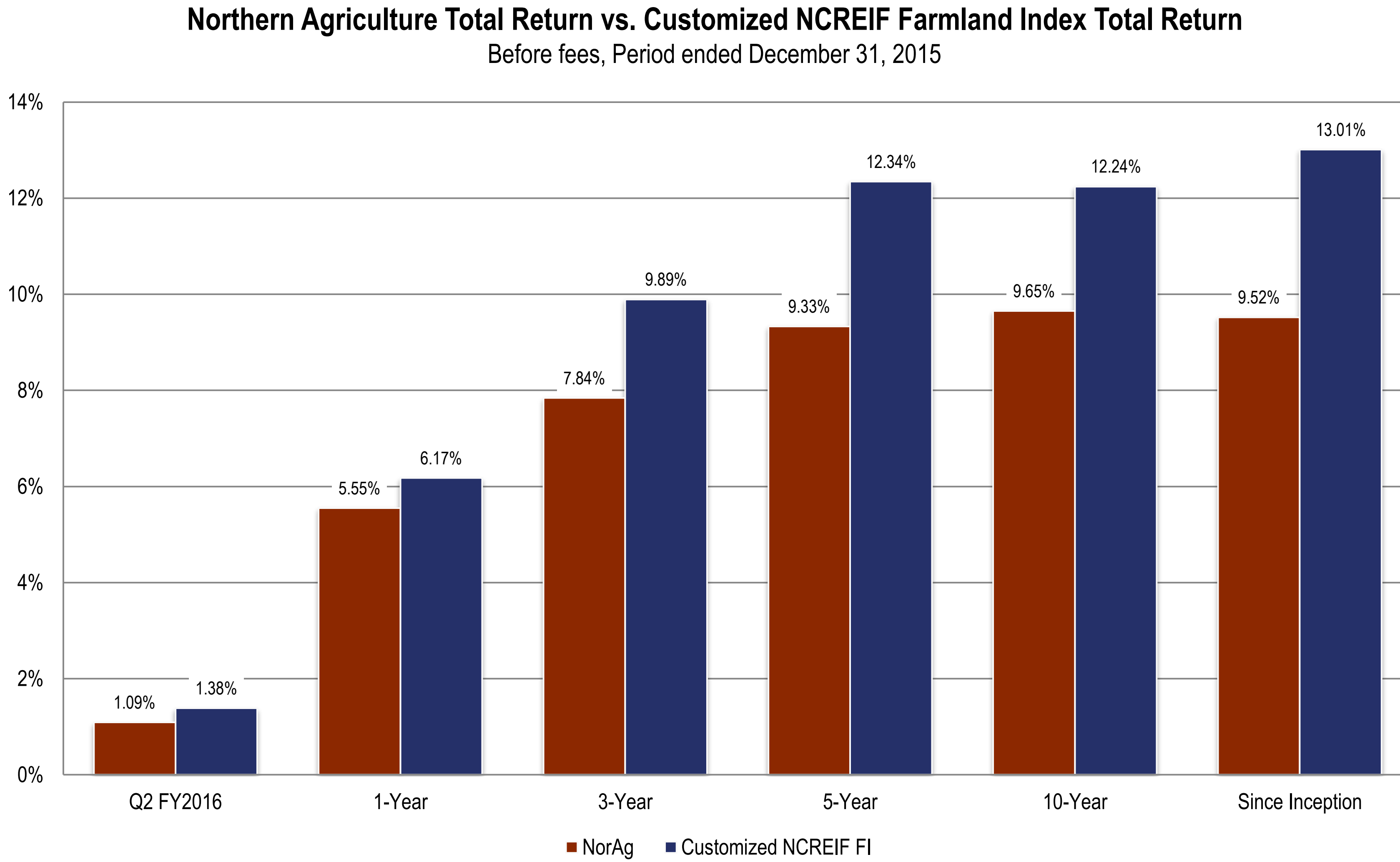
Northern Agriculture Fund-Level Performance
After fees, Period ended December 31, 2015



All returns are calculated at the fund level on NAV, after deducting investment management fees. Fund level calculations include administrative/audit expenses and debt, where applicable. Periods greater than 1-Year are annualized. Please refer to fee addendum in the Appendix for a further description of investment performance calculations and fees. Past performance is no guarantee of future results. Potential for profit as well as loss exists.

Northern Agriculture Portfolio

Portfolio Performance



Northern Agriculture fund-level income return performance before investment management fees vs. NCREIF Farmland Index income return performance (redefined 1/1/2009) customized to 80% Fixed and Variable Leased Annual Crops and 20% Fixed and Variable Lease Permanent Crops. The NCREIF Farmland Index is a property-level measure that does not reflect the deduction of investment management fees. Since inception returns as of July 2005. Periods greater than 1-Year are annualized.

Hancock Agricultural Investment Group®
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Northern Agriculture Portfolio
Portfolio Performance

Northern Agriculture vs. Customized NCREIF Farmland Index: Property-Level Returns
One-Year Period ended December 31, 2015

Crop Type	Region		Weight (% MV)	Income	Appreciation	Total Return
Leased Row Crop	Appalachian*	Northern Agriculture	9%	6.78%	-0.81%	5.92%
		NCREIF	-	-	-	-
	Corn Belt	Northern Agriculture	20%	3.25%	-1.51%	1.70%
		NCREIF	16%	3.15%	-2.94%	0.14%
	Delta	Northern Agriculture	23%	3.72%	1.28%	5.04%
		NCREIF	22%	3.59%	-0.27%	3.31%
	Lake States	Northern Agriculture	1%	7.42%	2.19%	9.74%
		NCREIF	4%	4.50%	-3.22%	1.17%
	Mountain	Northern Agriculture	23%	4.68%	2.22%	6.98%
		NCREIF	10%	3.86%	6.46%	10.51%
	Pacific Northwest	Northern Agriculture	3%	6.29%	4.93%	11.44%
		NCREIF	5%	4.25%	-1.40%	2.81%
	Southeast	Northern Agriculture	1%	3.66%	0.00%	3.66%
		NCREIF	7%	4.49%	6.63%	11.34%
	Southern Plains	Northern Agriculture	14%	6.32%	1.36%	7.74%
		NCREIF	5%	5.00%	1.95%	7.02%
	ALL ROW	Northern Agriculture	93%	4.61%	0.89%	5.53%
		NCREIF	80%	3.84%	1.50%	5.38%
Leased Permanent Crop	Pacific West	Northern Agriculture	7%	2.43%	5.67%	8.19%
		NCREIF	11%	6.18%	8.77%	15.36%
	ALL PERMANENT	Northern Agriculture	7%	2.43%	5.67%	8.19%
		NCREIF	20%	5.87%	3.36%	9.38%
Total Portfolio		**Northern Agriculture**	**100%**	**4.46%**	**1.21%**	**5.71%**
		NCREIF	**100%**	**4.25%**	**1.87%**	**6.17%**

*NCREIF FI does not provide a regional sub-index for Appalachia.

All returns calculated at the property level using NCREIF methodology. The NCREIF Farmland Index is a property index that does not reflect the impact of debt, fund-level expenses or investment management fees. NCREIF weights represent a portfolio composed of 20% permanent and 80% row crop holdings that are all 100% leased under fixed and variable rent. Percentages have been rounded and therefore may not sum to total.

Northern Agriculture Portfolio
Transaction Activity

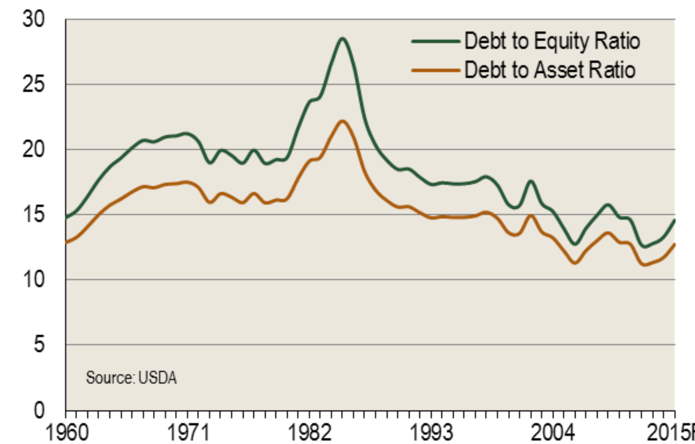
Hancock Agricultural Investment Group®
A Manulife Asset Management Company

- $79.2 million available for investment as of December 31, 2015
- Dispositions
  - Actively assessing the portfolio based on property performance per expectations
    - Two row crop properties located in Texas and Colorado identified for sale due to limited water availability
    - Unsolicited offer received for a third row crop property also located in Texas at 54% above appraised value
    - Partial sales of non-tillable land identified for conservation purposes on two row crop properties located in Illinois
- Acquisitions
  - North Carolina row crop property acquired February 2015
  - Two California properties acquired April 2016
    - Leased row crop property planted to tables grapes
    - Leased permanent crop property planted to almonds

US Farmland Investment Outlook

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

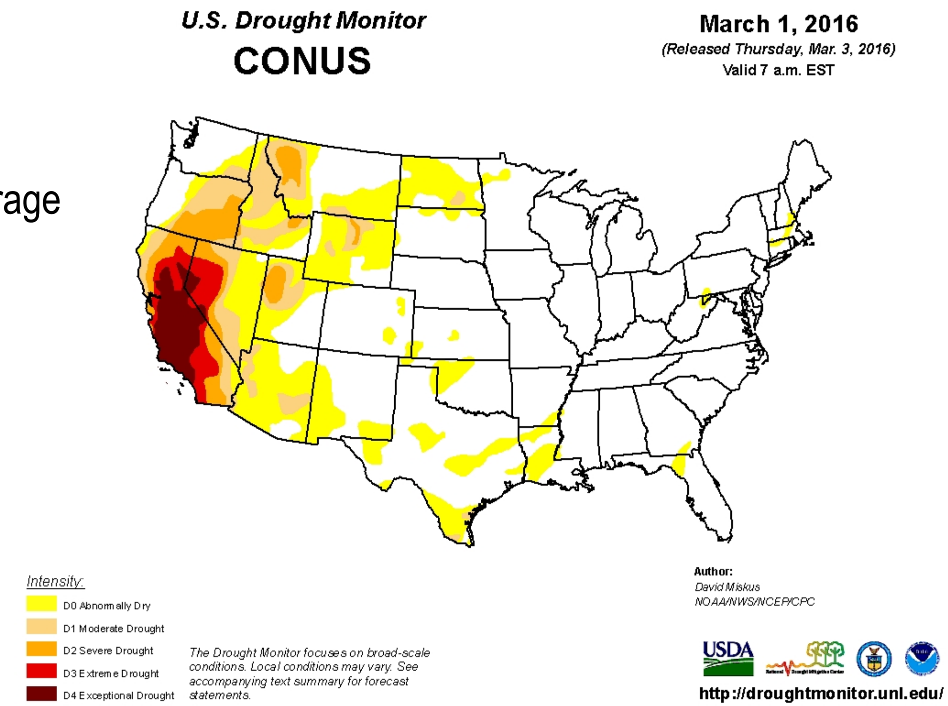
- While long term fundamentals of agricultural investments remain strong, the dampening of US farmland returns is expected in the short-term:
  - Commodity Prices
    - Row crop commodities likely to remain at lower levels
    - Tree nut prices expected to remain flat
  - Net Farm Income
    - 2016 forecast of $54.8 billion, down 3% from 2015
      - If realized, 2016 net farm income would be the lowest since 2002
    - Farm sector debt is expected to increase 3.1%
    - Despite the anticipated increase in debt and two years of declining net farm income, historically low levels of debt relative to assets continue



  - US Currency
    - The strong US dollar has led to a decline of exports year-over-year and is expected to continue
      - Increasing global competition
  - Interest Rates
    - The federal funds rate increased 25bps in December 2015 and is expected to increase to 1.5-2.75% by year end 2017
    - HAIG research has found that rising interest rates are associated with declining farmland returns, though not causative

Water Availability in the US

- Drought coverage declined to 14% as of February 2016
- This is the smallest area of drought coverage since Winter 2010
- The strong El Niño has significantly reduced the US drought footprint from 35% to 14%
- 95% of California was still in a drought in February 2016
- Drought conditions in Oregon and Washington have dissipated, representing declines of 67% and 68%, respectively



Source: U.S. Department of Agriculture meteorologist Brady Rippey

Summary

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

- $245.3 million farmland allocation
  - $165.8 million of committed capital
  - $79.2 million available for investment
- Total returns after fees
  - 1 Year 4.69%
  - Since Inception 8.62%
- Three acquisitions completed in the last 12+/- months; three dispositions and two partial sales in process
- Dampening of US farmland returns is expected in the short-term while long term fundamentals of agricultural investments remain strong

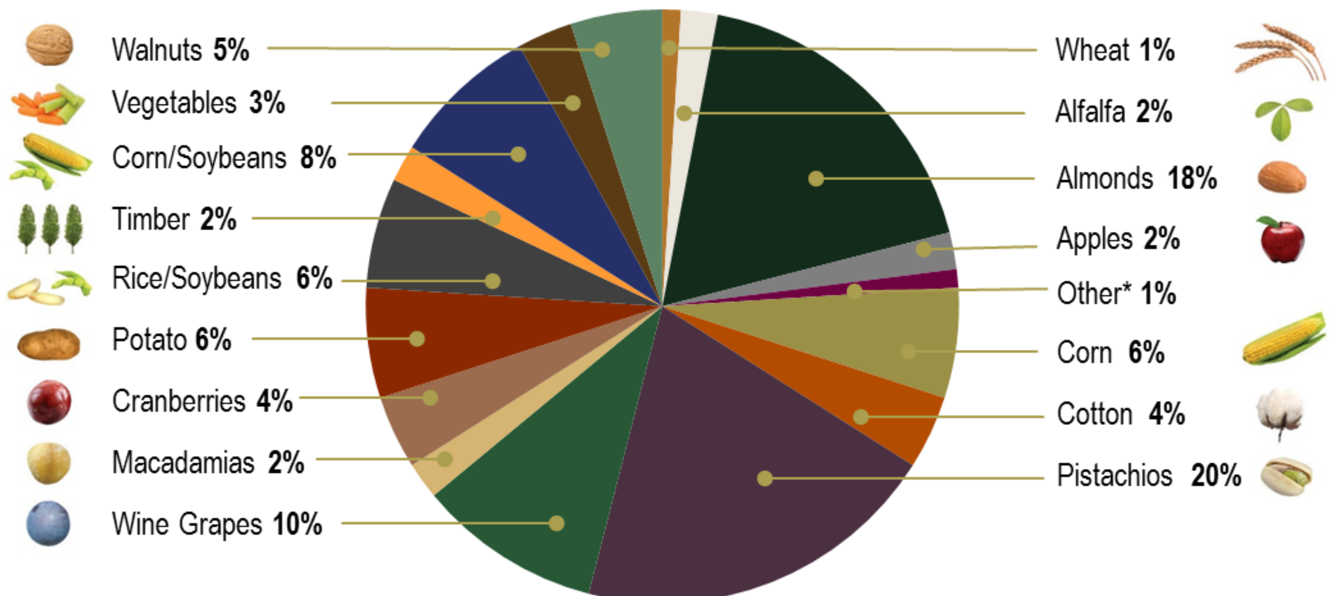
Appendix

Hancock Agricultural Investment Group

Overview

- A division of Hancock Natural Resource Group, Inc., a wholly-owned indirect subsidiary of Manulife Financial Corporation
- Total Assets Under Management (AUM) of $2.7 billion as of December 31, 2015
- Currently managing approximately 300,000 acres of U.S., Australian, and Canadian farmland

HAIG's Global Farmland Portfolio



*"Other" consists of olives, barley and cherries

As of December 31, 2015

Hancock Agricultural Investment Group

Client Account Management Team

Team	Biography
	**Debra Goundrey, Director Client Account Management**, is responsible for leading the Client Account Management team which encompasses client relationships, oversight of portfolio management, investment analysis and client reporting. Ms. Goundrey comes to HAIG with nine years of experience working with institutional clients globally and ten years in banking and finance. In her various positions she has been responsible for and led teams dedicated to client management and service. At her previous employer, Blue Sky Alternative Investments, Ms. Goundrey led fundraising efforts for a water fund focused on Australia's most diversified and prosperous agricultural region, the Murray Darling Basin. Ms. Goundrey holds an MBA from Melbourne Business School (Australia) and a BA in Agribusiness Communications from Curtin University (Australia). She was also selected for the Australian Rural Leadership Program in 1998-1999. Ms. Goundrey comes from a farming background with family ties to wine and wool production, and broadacre cropping.
	**Richard Bodio, CFA, Portfolio Manager**, is responsible for investment analysis, portfolio monitoring/management, and acquisitions. Prior to joining HAIG in 2011, Mr. Bodio worked in Financial Strategy for Forest Systems Management Company. Mr. Bodio holds a B.A. in English and Philosophy from Providence College and a MBA in Finance and Real Estate from the University of Connecticut, where he managed a portion of the University's endowment. Mr. Bodio is a CFA Charterholder and a member of the Boston Security Analysts Society.
	**Manisha Bicchieri, Portfolio Analyst**, assists with portfolio management, client reporting, and investment analysis for HAIG's institutional farmland investment program. Prior to joining HAIG, Ms. Bicchieri worked for Farm Credit East, ACA, where she managed a diverse agricultural portfolio of varied loan types and sizes. Ms. Bicchieri graduated from the University of Connecticut with a BS in Resource Economics with a concentration in Environmental Economics and Policy. She also minored in Agribusiness Management and Food Science.
	**Katherine Harkness, Investment Analyst**, assists with portfolio management, investment analysis and acquisitions. Prior to joining HAIG, Ms. Harkness worked as a credit analyst for Farm Credit East, ACA, one of the largest farm credit associations in the country. At FCE, she was responsible for credit analysis and underwriting of row and permanent crop farm businesses. She holds a B.S. with dual degrees in Animal Science and Applied Economics and Management from Cornell University and is currently pursuing a Masters of Economics and Masters of Business Administration from Boston University.
	**Brian Furrer, Portfolio Analyst,** assists with portfolio management, client reporting, and investment analysis. Brian started his career with Hancock Farmland Services (HFS) in 2015 where he worked as an investment analyst. At HFS, he was responsible preparing investment memorandums, financial modeling, and property management activities including lease modeling and property inspections. He holds a B.S degree in Agricultural Technology and Production Management and an MBA from Washington State University.

Hancock Agricultural Investment Group

Hancock Agricultural Investment Group®
A Manulife Asset Management Company

Other Key Staff

Team	Biography
	**Oliver S. Williams IV, CFA, President,,** directs the institutional farmland investment program and serves on the Investment Committee of the Hancock Natural Resource Group (HNRG). Previously, Oliver coordinated asset management activities and was part of the senior management team. Prior to joining HAIG in 1997, he spent 5 years with the First Pioneer Farm Credit, ACA, one of the largest farm credit associations in the country. At Farm Credit, he was responsible for evaluating and appraising farmland and farm businesses for potential loans. He also managed a farm loan portfolio, which included both row and permanent cropland. He is a member of the American Society of Farm Managers and Rural Appraisers, the Association for Investment Management and Research and the Boston Security Analysts Society. He has a BS in Agricultural Economics, with a concentration in finance, from Cornell University. Oliver grew up on a poultry and grain farm in western New York.
	**Carl B. Evers, Jr., President, Hancock Farmland Services,** directs U.S. property operations, acquisitions, leases and sales for HAIG. He oversees the farming operations and leasing for approximately 50,000 acres of permanent crops and 185,000 acres of row crops in the U.S.. Prior to joining FMS in 1987, Carl farmed permanent and row cropland for Newhall Land & Farming Co. He holds a BS in Agricultural Management from California Polytechnic State University in San Luis Obispo and a MBA from Golden Gate University at San Francisco. Carl is an Accredited Farm Manager and 20 year member of the American Society of Farm Managers and Rural Appraisers.
	**Brett MacNeil, Director Acquisitions**, is responsible for the farmland acquisition program, including sourcing farmland investment opportunities, managing due diligence and developing strategic alliance opportunities. He works closely with HAIG's regional acquisition managers, farm managers and the HNRG chief acquisitions officer. Mr. MacNeil brings to HAIG over 30 years experience in the agribusiness industry. Prior to joining HAIG in 2014, he was the president of Scythe & Spade Company, a professional service firm focused exclusively on the agribusiness industry. He serves as a board member for Farm Financial Standards Council and is a board advisor for the Northwest Agribusiness Executive Seminar. Mr. MacNeil holds a B.S. in General Agriculture from the University of Arizona and an MBA from the Keller Graduate School of Management.
	**Andrew Strahley, Director of Australian Operations,** is responsible for oversight of HAIG's Australian farmland acquisition and business development efforts in the Australian market. Additionally, Andrew is the Managing Director for Hancock FARM Company, which is HAIG's property management organization based in Brisbane, Queensland, Australia. As Managing Director of Hancock FARM, Andrew oversees property management and operations for HAIG's portfolio of farmland assets in Queensland and New South Wales. Andrew joined HAIG in 2000 and has over 25 years of agricultural investment experience working with global agricultural firms such as ConAgra, Mitsubishi and the Australian Meat and Livestock Corporation. Andrew holds a degree in Applied Science in Agriculture, studying at the Charles Stuart University at Wagga. Andrew is a member of the Australian Institute of Agricultural Science & Technology and serves as a Director on several agricultural boards
	**Bill Devens, Senior Agricultural Economist,** is responsible for developing price and farmland valuation forecasting models, global supply and demand balance sheets for agricultural commodities and assisting in the development of HAIG's business strategy. Prior to joining HAIG, he worked as a strategy consultant for HighQuest Partners, where he was Co-Head of HighQuest's consulting practice. During his time at HighQuest, Bill was responsible for the completion of 200+ projects for corporate clients in areas ranging from farmland investment and grain origination strategies to market entry strategies to due diligence on infrastructure and farmland assets. Prior to joining HighQuest, Bill worked for Bunge Global Agribusiness in roles ranging from international research to strategy development and M&A. Bill holds a BA in History from Davidson College and an MBA from Thunderbird.

Notes and Disclosures

Hancock Agricultural Investment Group is a division of Hancock Natural Resource Group, Inc., a registered investment advisor and indirect wholly-owned subsidiary of Manulife Financial Corporation.

Projected Performance

Projected performance figures are based on a model containing certain assumptions, including but not limited to assumptions as to appreciation of farmland, increases in cash rental rates, increases in production costs. They should not be construed as guarantees of future returns, nor should they be interpreted as implications of future profitability. Potential for profit as well as for loss exists. The impact of future economic, market and weather factors may adversely affect model results. Performance objectives and projections are based on information available to us at this time and are not meant to be interpreted as guarantees or commitments to future results. The economic outlook is developed by HAIG's professionals. Our outlook is based on the information available to us at this time and our analysis of same. While we are confident in our projections, one should not interpret them as a guarantee of performance.

Before Fees Performance

Performance figures do not reflect the deduction of investment advisory fees. The client's return will be reduced by advisory fees and any other expenses it may incur in the management of its investment advisory account. Investment advisory fees of Hancock Natural Resource Group are described in Part II of Advisors Form ADV.

Effect of Advisory Fees Over 10-Year Period

If, for example, the gross total annualized return of a $10 million investment over a 10-year period were 9.5% nominal, deducting an annual investment management fee of 100 basis points on the invested capital over a 10-year period would produce a total value of $25.8 million after fees, versus $26.8 million before fees.

Representative Example of Compounded Effect of Investment Advisory Fee

A representative 1.00% management fee deducted from a portfolio quarterly (0.25%/quarter) would result in the following cumulative compound reduction of the portfolio time-weighted rate of return.

Years	Cumulative Fee	Years	Cumulative Fee
1	**1.004%**	**6**	**6.176%**
2	**2.018%**	**7**	**7.241%**
3	**3.042%**	**8**	**8.318%**
4	**4.076%**	**9**	**9.405%**
5	**4.121%**	**10**	**10.503%**

Advent

Mandate: **Convertible Bond** **Hired:** 2009

Firm Information

Advent is a Delaware limited liability company that was founded in 1995 as a division of Utendahl Capital Management L.P. Advent became independent in 2001.

As of March 31, 2016, Advent had $8.6 billion in fixed income assets under management.

Key Executives:
Craig Altshuler, Investor Relations

Paul Latronica, Portfolio Manager

Investment Approach

Advent utilizes a dynamic bottom-up relative value approach to security analysis. The Advent team believes that focus and experience regarding investments in credit strategies help them avoid defaults and better gauge probabilities of downgrades, early redemption and corporate event risk.

The firm believes that credit analysis is the prime driver of their process and value added. The firm focuses on "income" oriented securities (by this they mean issues that trade like fixed income securities). In Advent's opinion such issues often provide opportunities to invest in "growth" companies that have temporarily fallen into disfavor. Advent strives to identify stable to improving credits through their analysis of cash flow, interest coverage and balance sheet analysis. They also believe that properly understanding the possibility of credit rating changes, early redemption and corporate even risks help them to minimize potential price weakness.

Benchmark: B of A Yield Alternative Index

Total ARMB Mandate & Fees

Assets Under Management:
2014: $8,427,600
2013: $7,591,300
2012: $6,092,100
2011: $5,537,900
2010: $5,799,900
2009: $4,838,400
2008: $2,930,100
2007: $4,252,400

Fee Schedule:
Annual
.900% on the first $25mm
.700 % on the next $25mm
.600% on the next $50mm
.500% on the remaining amount

Concerns: None

3/31/16 Performance (gross of fees)

	Last Quarter	1-Year	3-Years Annualized	5-Years Annualized
Advent	.12%	-4.11%	3.91%	4.22%
Benchmark	-1.48%	-11.22%	-1.12%	1.52%

ADVENT
CAPITAL MANAGEMENT, LLC

Alaska Retirement Management Board

Portfolio Review

April 22, 2016

New York Office | 1271 Avenue of the Americas, 45th Floor, New York, NY 10020 | +1 (212) 482-1600

London Office | 4th Floor Devonshire House, 1 Mayfair Place, London, W1J 8AJ, UK | 44 203 357 9990

Table of Contacts

I. Advent Capital Management

Advent Adds Value

- **Advent manages approximately $8.6 billion** in long-only, alternative and closed-end fund strategies.
- **Advent has 60 employees including 24 investment professionals** in New York and London.
  - Advent has one of the largest platforms in the world focused on convertibles.
- **Significant experience in the global convertible and high yield markets** with portfolio managers averaging 25 years of experience.
- **Advent utilizes a dynamic bottom-up, fundamental approach to security selection. Our proprietary cash flow model** seeks to identify changes in company fundamentals before they are reflected in reported earnings or security price movements.
- **Advent has a unique 360° view of the capital markets** by globally managing both long-only and hedge fund strategies – evaluating all parts of the capital structure.
- **Advent has achieved superior returns across all products since 1995** through our disciplined investment process of selecting attractive credits with favorable fundamentals.

Assets under management as of 3/31/16.

ADVENT
CAPITAL MANAGEMENT, LLC

Synergistic Strategies

Alternative Strategies

Advent Global Partners

Employs a disciplined relative value approach to volatility and credit investing with an event driven bias. Advent implements a flexible multi-strategy approach to investing through several sub-strategies including, but not limited to, idiosyncratic volatility arbitrage, corporate transactions and event-driven opportunities, credit investing, short selling, and option/volatility arbitrage.

Global Opportunity Strategy

Seeks to maximize returns through Advent's insights while mitigating risk. The strategy seeks to capture the best investment opportunities Advent identifies in any given economic environment and invest through multiple strategies, including, but not limited to, relative value credit, capital structure arbitrage, distressed, convertible arbitrage, event driven/catalyst driven credit and equities.

Long Only Strategies

Phoenix Convertible Income Strategy

Seeks high yield and capital gains by investing in "theoretically cheap" USD denominated convertible securities that trade close to their bond value, while seeking to limit downside risk.

Global Phoenix Convertible Strategy

Seeks high yields and capital gains by investing in "theoretically cheap" global convertible securities that trade close to their bond value, while seeking to limit downside risk.

Balanced Convertible Strategy

Seeks a high total return by investing in a portfolio of USD denominated convertible securities that provide equity-like returns, while seeking to limit downside risk.

Global Balanced Convertible Strategy

Seeks a high total return by investing in a portfolio of global convertible securities that provide equity-like returns, while seeking to limit downside risk.

High Yield Strategy

Seeks income and total return by investing primarily in high yielding corporate credit using fundamental and relative value analysis to identify undervalued securities.

Closed-End Funds

Advent Claymore Convertible Securities and Income Fund

Publicly traded closed-end fund that seeks to provide total return through a combination of capital appreciation and current income.

Advent Claymore Convertible Securities and Income Fund II

Publicly traded closed-end fund that seeks to provide total return through combination of a capital appreciation and current income.

Advent/Claymore Enhanced Growth and Income Fund

Publicly traded closed-end fund that seeks to provide current income and current gains from trading securities with a secondary objective of long-term capital.

II. Convertible Dynamics

Convertible Dynamics

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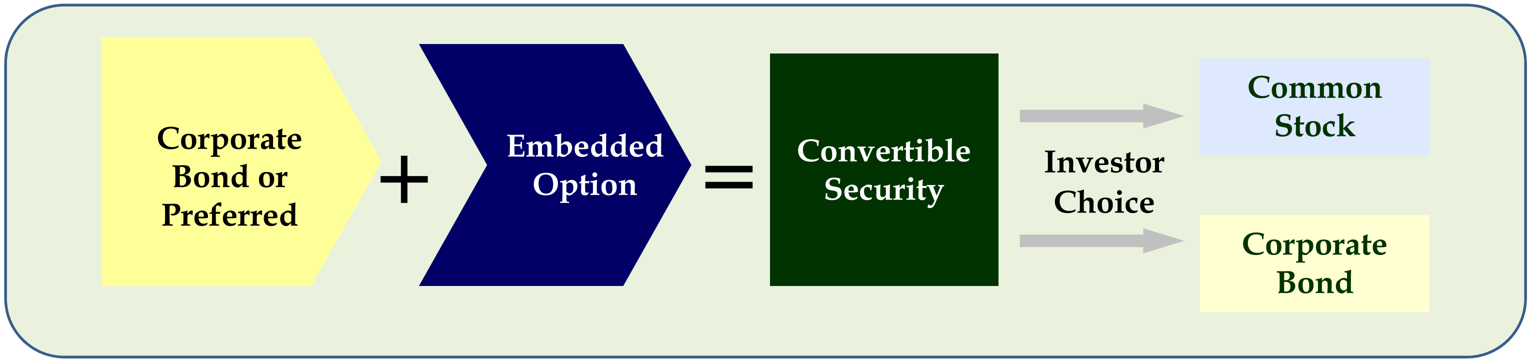
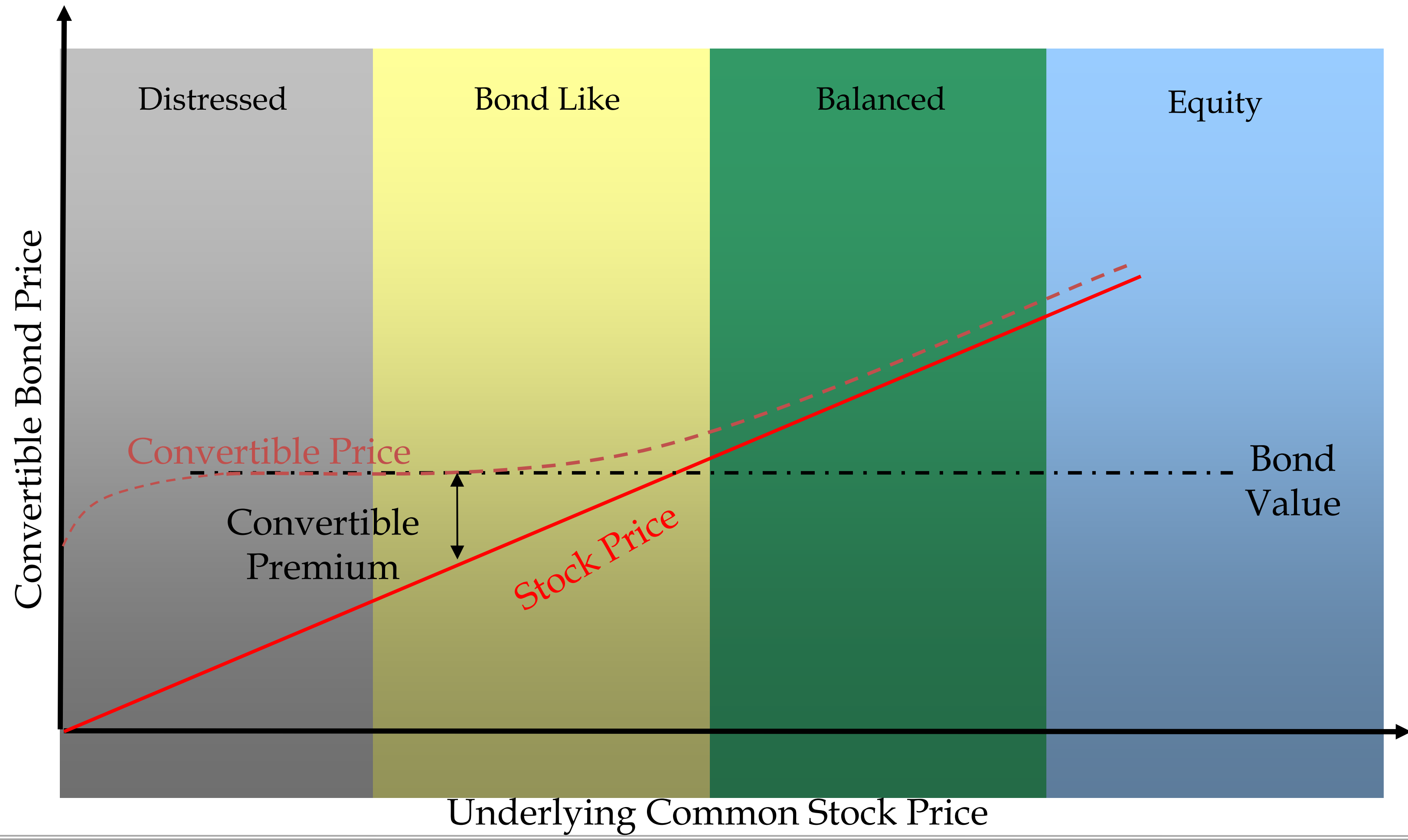


***Convertible Security*: A corporate bond or preferred stock with an embedded option that allows the holder to convert the bond or preferred stock into a fixed number of common shares of the issuing company. Convertibles typically:**

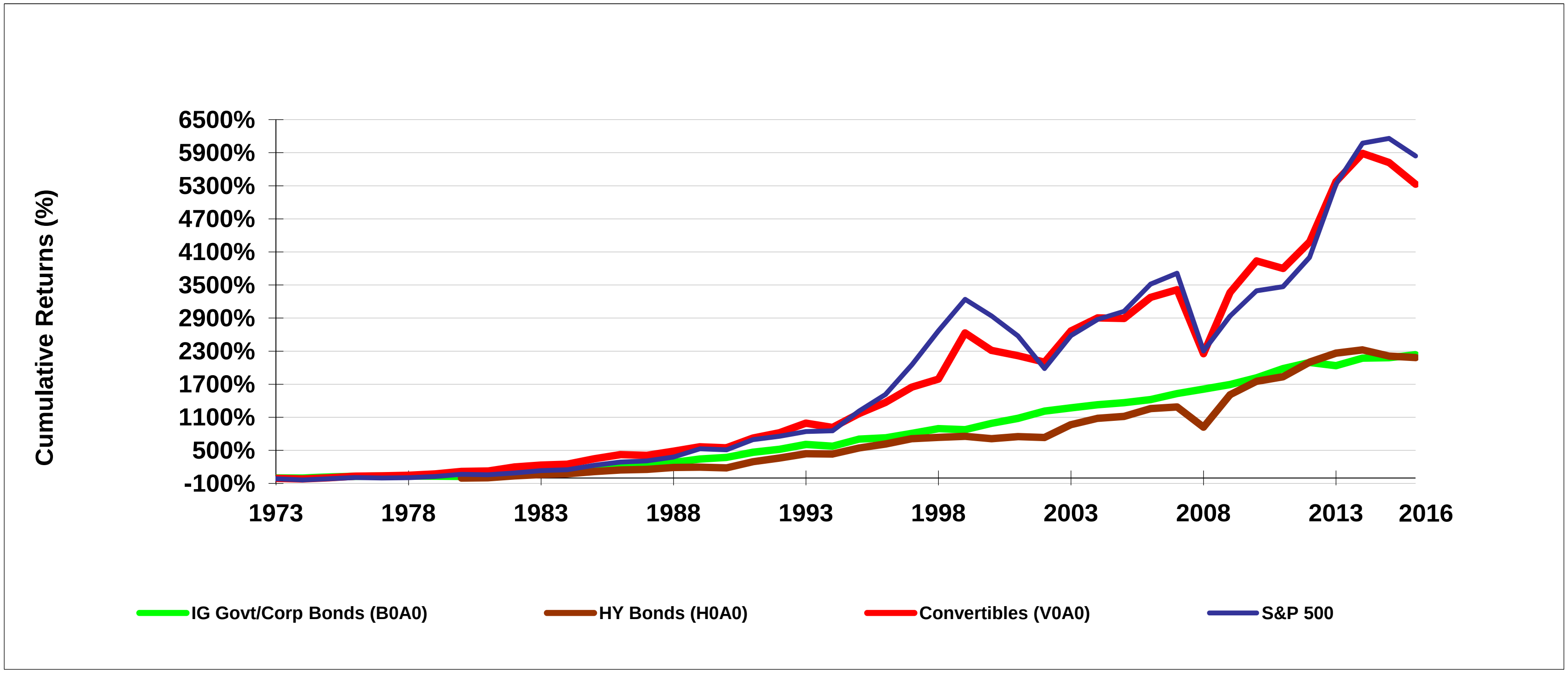
- Provide equity-like returns with much less risk than outright ownership of common stocks.
- Participate in the appreciation of the issuing company's stock because convertibles provide the right to convert into a fixed number of the company's common shares.
- Like other corporate bonds and preferred stocks, convertibles pay interest and repay principal at maturity; hence, the investor is protected on the downside if the underlying stock fails to perform.

Convertible Price Dynamics



Convertibles Have Provided Equity-Like Returns Over Time With Only a Portion of the Risk and Have Outperformed Traditional Fixed Income Asset Classes

Cumulative Total Returns: December 1973 – February 2016



Source: Bank of America Merrill Lynch and, prior to June 1992, Ibbotson Associates. B0A0 is the Bank of America Merrill Lynch Corporate and Government Master Index. H0A0 is the Bank of America Merrill Lynch High Yield Master II Index. V0A0 is the Bank of America Merrill Lynch All U.S. Convertibles Index excluding Mandatories. Past performance is not a guarantee of future results.

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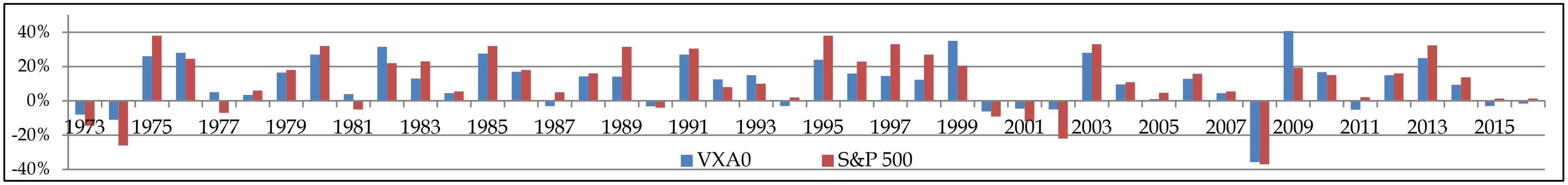
Convertibles Have Demonstrated Less Risk and Achieved Higher Sharpe Ratios versus Equities Over Time

12/87 through 2/16	Ann. Return	Ann. Standard Deviation	Ann. Sharpe Ratio
BofA ML All U.S. Convertibles (V0A0)	**9.02%**	**11.67%**	**0.49**
S&P 500	9.49%	14.39%	0.43
Russell 2000	9.11%	18.67%	0.31

Source: Bank of America Merrill Lynch Convertible Research, Bloomberg. Risk Free Rate is an average of the 3 Month Treasury rate. V0A0 is the Bank of America Merrill Lynch All U.S. Convertibles excluding Mandatories Index. Past performance is not a guarantee of future results.

Convertibles: Participate in the Upside, Protect on the Downside



Annual Returns:

	All U.S. Convertibles (VXA0)	S&P 500	Market Capture: All U.S. Convertibles (VXA0)
2016	-1.56%	1.35%	-116.02%
2015	-2.99%	1.37%	-217.29%
2014	9.44%	13.68%	69.02%
2013	24.92%	32.38%	76.97%
2012	14.96%	16.00%	93.49%
2011	-5.17%	2.11%	-244.93%
2010	16.78%	15.06%	111.42%
2009	49.11%	26.45%	185.70%
2008	-35.74%	-36.99%	96.62%
2007	4.52%	5.49%	82.25%
2006	12.83%	15.79%	81.30%
2005	1.01%	4.91%	20.64%
2004	9.59%	10.86%	88.27%
2003	27.13%	28.69%	94.57%
2002	-8.59%	-22.10%	38.86%
2001	-4.45%	-11.88%	37.43%
2000	-9.99%	-9.09%	109.94%
1999	39.57%	21.03%	188.12%
1998	8.94%	28.57%	31.29%
1997	19.56%	33.38%	58.59%
1996	15.92%	22.96%	69.36%

Summary:

	All U.S. Convertibles (VXA0)	S&P 500
Sum of Up Yr Returns	244.6%	280.1%
Sum of Down Yr Returns	-58.8%	-80.1%
Market Upside Capture	87%	
Market Downside Capture	73%	

Source: Bank of America Merrill Lynch Convertible Research. Performance data is from January 1, 1996 through March 31, 2016. VXA0 is the Bank of America Merrill Lynch All U.S. Convertibles Index. Past performance is not a guarantee of future results.

III. Portfolio Review

Phoenix Investment Strategy

- **Seek income and capital gains** by investing in undervalued convertibles which trade no more than 20% above their straight bond value.
- **Utilize a fixed-income approach** to convertibles by performing bottom-up fundamental credit analysis to identify undervalued convertibles.
- **Identify securities with positive asymmetry** that exhibit less downside risk than the overall convertible market, but have the ability to participate in the upside of the underlying equity.
- **Employ a growth and income strategy, with a value profile**, by investing in companies and sectors that are temporarily out-of-favor but have attractive valuations and provide growth opportunities.

Value Added Strategy

- **Ahead of all relevant benchmarks with positive returns for 16 out of 19 years with no defaults.***
  - Only three down years in 19 calendar years

- Managed by **consistent portfolio management team** since its inception.

- **Enhanced fixed income strategy** that combines the characteristics of bonds with the total return potential of equities.

- **Our unique credit focus enhances returns and limits downside risk** by gauging probabilities of upgrades, downgrades, early redemption and corporate event risk. We detect weakness before those who take an equity approach. We avoid distressed convertibles.

- **Take advantage of income convertibles that often "fall between the cracks"** having been sold by equity portfolio managers, but not yet identified by fixed-income investors.

**The Phoenix Convertible Income Institutional Composite has held no defaulted securities in client portfolios.*

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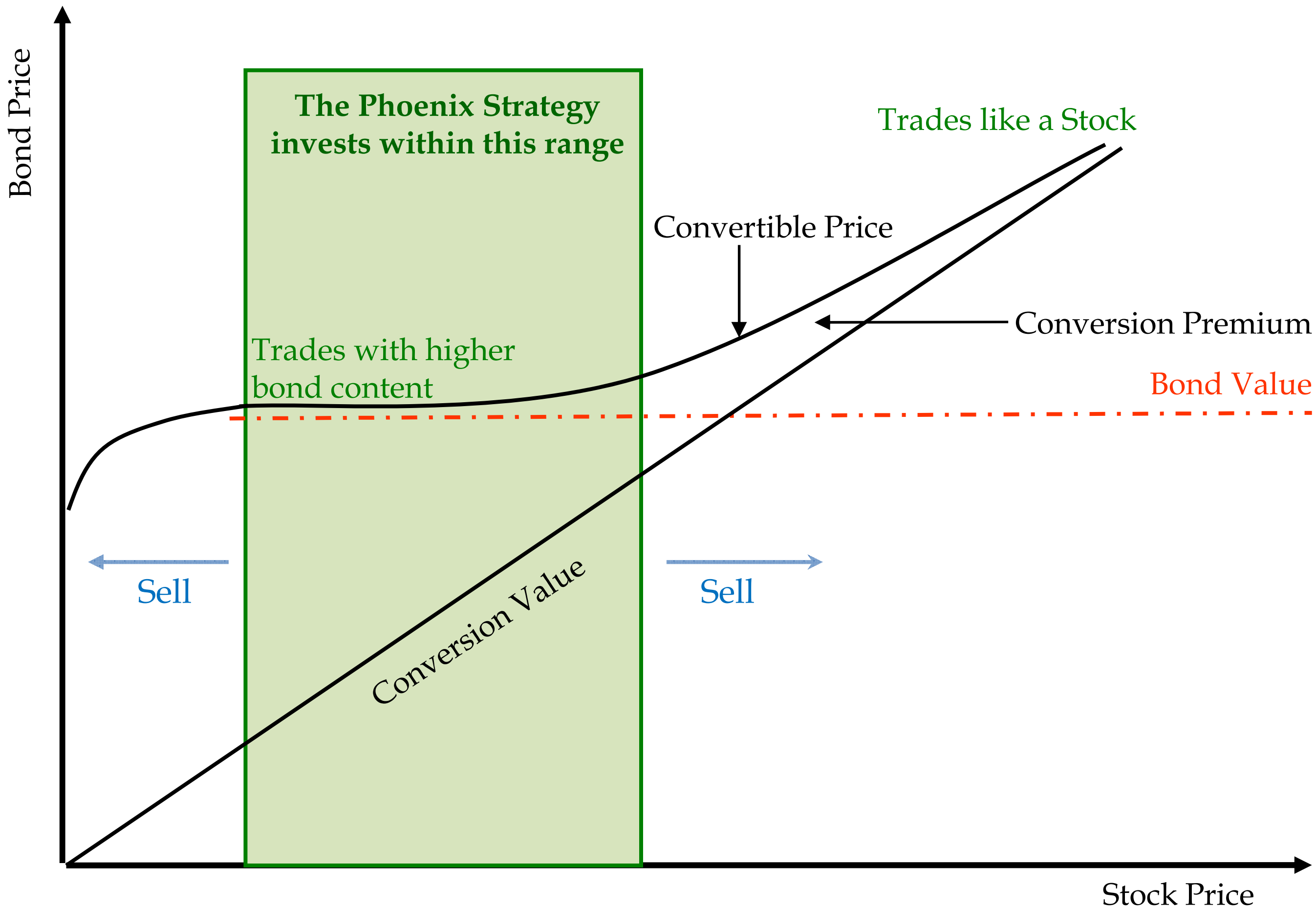
Phoenix Investment Universe



- The Phoenix Strategy seeks convertibles trading close to their straight bond value.
- Scale out of securities that have appreciated more than 30% above bond value in order to reinvest in issues with better asymmetry.
- Sell if holdings become distressed.

The Phoenix Strategy is defined as the Phoenix Convertible Income Strategy.

Portfolio Management Team

Tracy Maitland – President, CIO, Co-Portfolio Manager

- Serves as President & Chief Investment Officer of Advent Capital Management, LLC, overseeing all investment activities of the firm.
- Prior to founding Advent, was a Director in the Convertible Securities Department at Merrill Lynch. His experience spans trading, sales, origination and portfolio management of convertible securities.
- 33 years of experience in convertibles.
- Co-Portfolio Manager of the Phoenix Convertible Income Strategy since its inception in 1996.

Paul Latronica – Managing Director, Co-Portfolio Manager

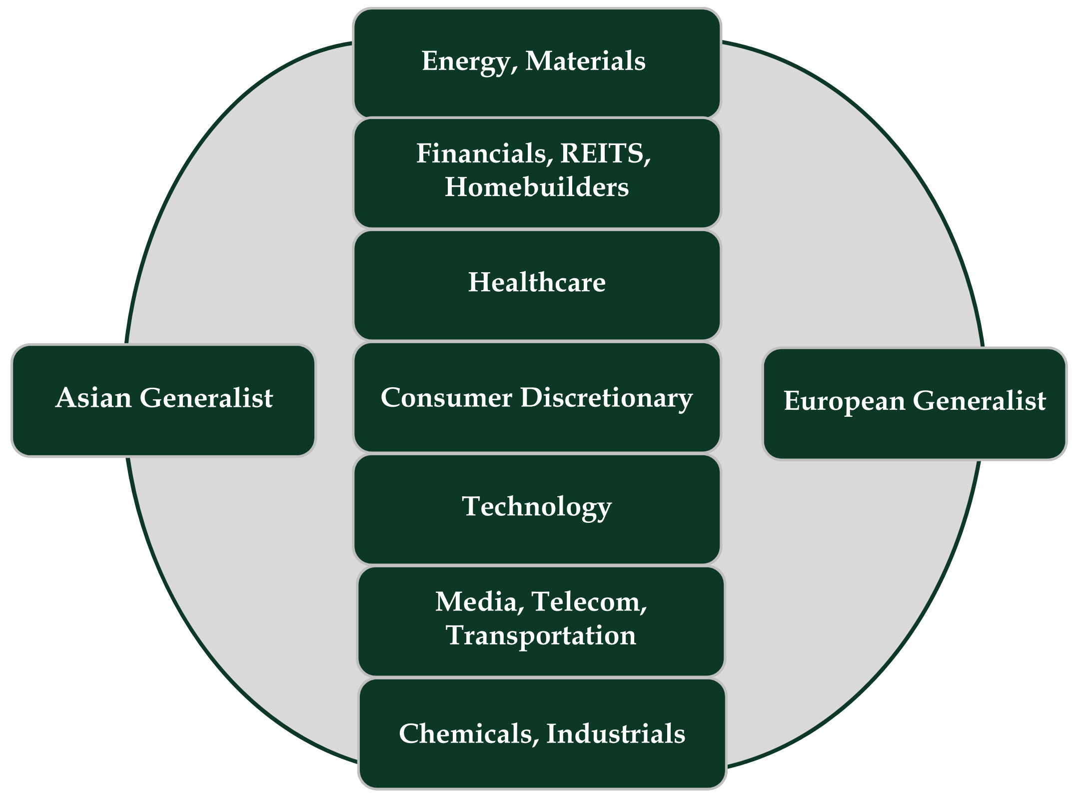
- 22 years of investment experience including manager of operations and head of trading.
- Developed a proprietary trading platform creating a listed market for OTC trades.
- 10+ overall years involvement with the Phoenix Convertible Income Strategy.

Supported by an experienced Investment Team and Risk Management Committee

- Investment team of 24 professionals including 9 research analysts
- Risk Management Committee consists of Advent's Chief Operating Officer, Chief Risk Officer, and Director of Research

Advent's Credit Research Team

- Advent's research team is sector focused, complemented by multi-lingual, regional analysts.
- Our **capital structure research analysts have an average of 18 years of experience** covering their sectors. They have developed relationships with company managements that create open lines of communication and key insights.
- Advent's specialized research analysts take a **proactive approach** in analyzing credits and their relative value within a company's capital structure and across its industry.



Performance Summary

As of March 31, 2016

(%)	YTD 2016	2015	3 Year Ann.	5 Year Ann.	Since Inception Ann.
Alaska Portfolio (Gross)	**0.23**	**(0.93)**	**4.10**	**4.42**	**7.05**
Bank of America Merrill Lynch Yield Alternatives Convertible Index (VYLD)	(1.48)	(8.77)	(1.12)	1.52	4.46
Excess Returns	+171 bps	+784 bps	+522 bps	+290 bps	+259 bps

March 2016 performance is preliminary. The inception of Alaska portfolio was October 28, 2009.

Portfolio Characteristics

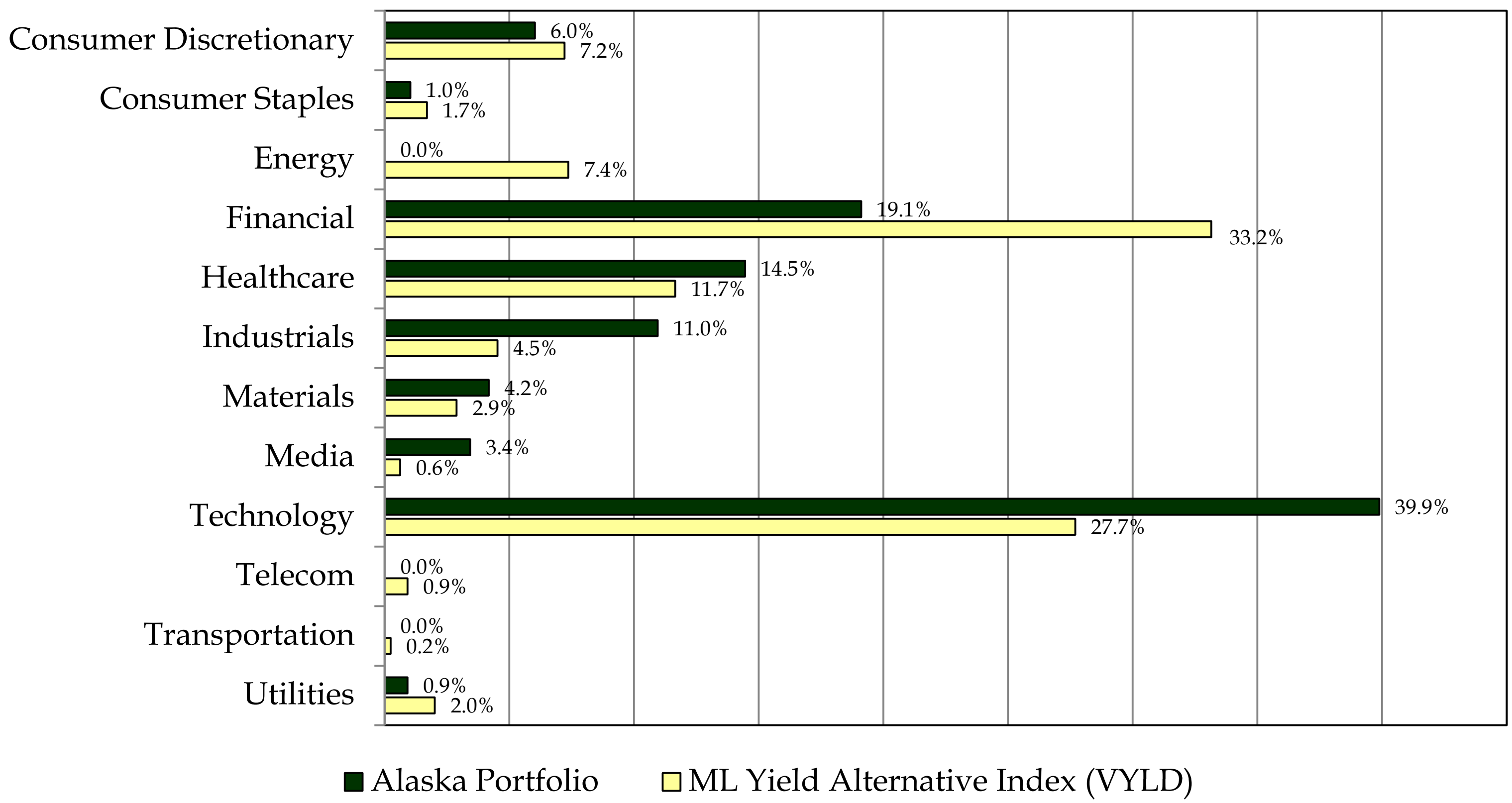
As of February 29, 2016

	Quality	Current Yield	Delta	Conversion Premium	Investment Value Premium
Alaska Portfolio	**BB+**	**2.2%**	**25.7%**	**86.3%**	**11.6%**
ML Yield Alternatives (VYLD)	BB	3.8%	17.0%	122.9%	2.3%
ML All Traditional (V0A0)	BB+	2.6%	47.0%	62.3%	48.8%

Source: Bank of America Merrill Lynch. VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. V0A0 is the Bank of America Merrill Lynch All U.S. Convertibles Index Excluding Mandatories. Average credit quality is calculated using the same methodology as applied to the Bank of America Merrill Lynch. A score is assigned to the average of Moody's/S&P rating for each security, then a weighted average is calculated, excluding non rated issues, then score is re-mapped to S&P rating scale.

Sector Diversification

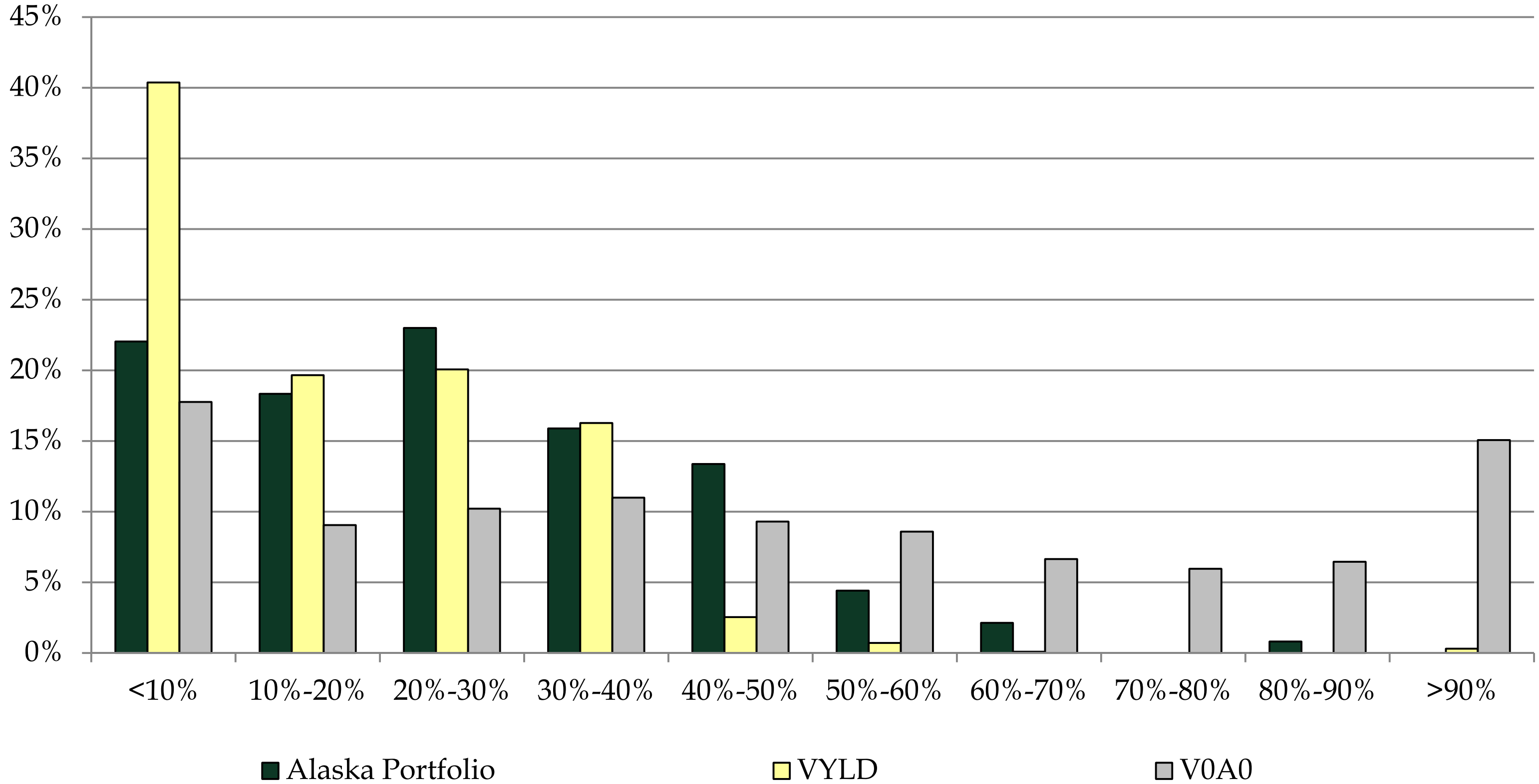
As of February 29, 2016



Source: Bank of America Merrill Lynch. VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. These examples are shown to exemplify Advent's research and analysis process only. The analysis is based on industry sources that we believe to be accurate. Advent makes no representation, however, as to the accuracy of this information. This is not a recommendation to buy or sell any specific security.

Delta Distribution

As of February 29, 2016



Source: Bank of America Merrill Lynch. VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. V0A0 is the Bank of America Merrill Lynch All U.S. Convertibles Excluding Mandatories Index. These examples are shown to exemplify Advent's research and analysis process only. The analysis is based on industry sources that we believe to be accurate. Advent makes no representation, however, as to the accuracy of this information. This is not a recommendation to buy or sell any specific security.

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Top Ten Holdings

As of February 29, 2016

Issuer	Sector	% of Portfolio
Bank of America	Financial	2.83%
Wells Fargo	Financial	2.78%
Twitter	Technology	2.74%
Citrix Systems	Technology	2.51%
Sandisk	Technology	2.28%
The Priceline Group	Technology	2.20%
Illumina	Healthcare	2.06%
Hologic	Healthcare	1.97%
Siemens	Industrials	1.89%
WebMD	Technology	1.87%

2015 Performance Attribution

As of December 31, 2015

	Alaska Portfolio			VYLD Benchmark			Excess		
	Weight	Return	Contribution	Weight	Return	Contribution	Weight	Return	Contribution
Consumer Discretionary	5.31%	3.11%	0.17%	5.00%	-10.29%	-0.52%	0.30%	13.40%	0.68%
Consumer Staples	0.49%	23.92%	0.12%	1.97%	10.95%	0.33%	-1.47%	12.97%	-0.21%
Energy	6.64%	-36.67%	-2.43%	15.11%	-48.91%	-7.39%	-8.47%	12.24%	4.96%
Financials	17.85%	1.29%	0.23%	34.09%	0.91%	0.31%	-16.24%	0.38%	-0.08%
Healthcare	12.05%	11.89%	1.43%	6.90%	13.77%	0.95%	5.15%	-1.88%	0.48%
Industrials	9.31%	-1.27%	-0.12%	4.65%	1.78%	0.08%	4.66%	-3.05%	-0.20%
Materials	4.47%	-2.04%	-0.09%	2.97%	-41.87%	-1.24%	1.50%	39.84%	1.15%
Media	3.90%	-1.86%	-0.07%	0.52%	-30.30%	-0.16%	3.38%	28.43%	0.09%
Technology	34.73%	-0.07%	-0.03%	25.43%	-3.91%	-0.99%	9.30%	3.84%	0.97%
Telecommunications	1.49%	-1.58%	-0.02%	1.41%	-3.94%	-0.06%	0.08%	2.36%	0.03%
Transportation	0.00%	0.00%	0.00%	0.51%	4.47%	0.04%	-0.51%	-4.47%	-0.04%
Utilities	0.46%	-12.48%	-0.11%	1.43%	-8.85%	-0.13%	-0.97%	-3.63%	0.02%
			-0.93%			**-8.78%**			**7.85%**

Portfolio characteristics above are for a representative portfolio within the Phoenix Convertible Income Institutional Composite. VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. These examples are shown to exemplify Advent's research and analysis process only. The analysis is based on industry sources that we believe to be accurate. Advent makes no representation, however, as to the accuracy of this information. This is not a recommendation to buy or sell any specific security. Cash has been excluded from the sector breakout.

2015 Performance Attribution

As of December 31, 2015

Top 5 Securities by Relative Contribution

Issuer	Sector	% Portfolio Contribution	% Benchmark Contribution	Difference (%)
Chesapeake Energy	Energy	(1.05)	(4.53)	+3.47
SunEdison	Technology	0.18	(1.02)	+1.20
Ctrip.com	Consumer Discretionary	0.54	0.00	+0.54
Peabody Energy	Materials	0.00	(0.52)	+0.52
Hologic	Healthcare	0.49	0.09	+0.40

Bottom 5 Securities by Relative Contribution

Issuer	Sector	% Portfolio Contribution	% Benchmark Contribution	Difference (%)
Cemex	Industrials	(0.35)	0.00	(0.35)
Exelixis	Healthcare	0.00	0.29	(0.29)
Herbalife	Consumer Staples	0.12	0.38	(0.27)
Tesla Motors	Consumer Discretionary	0.01	0.28	(0.26)
Yahoo	Technology	(0.32)	(0.07)	(0.25)

VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. These examples are shown to exemplify Advent's research and analysis process only. The analysis is based on industry sources that we believe to be accurate. Advent makes no representation, however, as to the accuracy of this information. This is not a recommendation to buy or sell any specific security.

Conclusion

- The combination of current yield and equity sensitivity offers the potential for equity-like returns with lower risk than owning stocks.

- Convertibles are well positioned to benefit from an increase in volatility because their embedded equity option becomes more valuable .

- In rising interest rate environments, convertibles have historically outperformed key fixed income benchmarks, exhibiting about half the duration risk of equivalent straight bonds.

- Active managers can exploit inefficiencies within the convertibles market due to several factors, including:
  1) Reduced presence of hedge funds and prop desks, creating a more stable market with fewer volatility driven competitors
  2) Increased amount of nonrated issues
  3) Transient investors, i.e. equity or fixed income mutual funds
  4) Over-the-counter nature of convertible market

Phoenix Composite Risk/Return Characteristics

As of March 31, 2016

	YTD	1 Year	3 Year Ann.	5 Year Ann.	10 Year Ann.	Since Inception Return Ann.	Standard Deviation Ann. Since Inception	Sharpe Ratio Ann. Since Inception
Phoenix Composite (Gross)	0.21	-3.89	4.06	4.43	5.75	8.34	8.13	0.75
Phoenix Composite (Net)	0.07	-4.42	3.49	3.84	5.13	7.23	8.13	0.61
BAML Yield Alternatives Index (VYLD)	-1.48	-11.22	-1.12	1.52	3.63	N/A	N/A	N/A
BAML All Traditional Convertible Index (V0A0)	-2.56	-7.97	6.29	6.25	6.24	7.36	12.82	0.40
BAML US High Yield Master II Index (H0A0)	3.25	-4.01	1.75	4.71	6.85	6.67	9.15	0.48
Barclays Capital US Aggregate Index	3.03	1.97	2.50	3.78	4.90	5.55	3.42	0.96
S&P 500 Index	1.35	1.77	11.81	11.57	7.00	7.60	15.53	0.34
Russell 2000 Index	-1.53	-9.77	6.84	7.20	5.26	7.58	20.14	0.26

March 2016 performance is preliminary. The Phoenix Composite is the Phoenix Convertible Income Institutional Composite. Inception date of the Phoenix Composite was October 18, 1996. VYLD is the Bank of America Merrill Lynch Yield Alternatives Index. V0A0 is the Bank of America Merrill Lynch All U.S. Convertibles Index Excluding Mandatories. Please see the "Disclosures" section at the end of this presentation. Past performance is not a guarantee of future results.

Phoenix Strategy: Participate in the Upside, Protect on the Downside

Annual Returns:

	Phoenix Composite (Gross)	**S&P 500**	**Market (S&P 500) Capture: Phoenix Composite (Gross)**
2016	0.21%	1.35%	15.61%
2015	-1.10%	1.37%	-79.6%
2014	4.94%	13.68%	36.1%
2013	13.84%	32.38%	42.8%
2012	11.66%	16.00%	72.9%
2011	-1.73%	2.11%	-82.0%
2010	14.90%	15.06%	98.9 %
2009	35.39%	26.45%	133.8 %
2008	-20.82%	-36.99%	56.3 %
2007	3.05%	5.49%	55.6 %
2006	11.06%	15.79%	70.0 %
2005	3.31%	4.91%	67.4 %
2004	4.91%	10.86%	45.2 %
2003	30.09%	28.69%	104.9 %
2002	5.44%	-22.10%	-24.6 %
2001	18.59%	-11.88%	-156.5 %
2000	8.17%	-9.09%	-89.9 %
1999	11.55%	21.03%	54.9 %
1998	5.86%	28.57%	20.5 %
1997	12.89%	33.38%	38.6 %

Summary:

	Phoenix Composite (Gross)	**S&P**
Sum of Up Yr Returns	160.83%	257.12%
Sum of Down Yr Returns	11.38%	-80.06%
Market Upside Capture	**63%**	
Market Downside Capture	**-14%**	

Advent's Phoenix Convertible Income Strategy, which invests in convertibles that trade within 20% of bond floor, participated in 63% of the upside and protected significantly on the downside. **In fact, Phoenix provided positive returns in most years when the S&P was down**, as illustrated by the negative downside capture (-14%).

March 2016 performance is preliminary. Source: Bank of America Merrill Lynch Convertible Research. The Phoenix Composite is the Phoenix Convertible Income Institutional Composite. Performance data is from January 1, 1997 through March 31, 2016 for the Phoenix Composite and S&P 500 Index. Please see the "Disclosures" section at the end of this presentation. Past performance is not a guarantee of future results.

Phoenix Performance

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Phoenix Composite Monthly Returns (Gross)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2016	-3.38%	0.50%	3.20%										0.21%
2015	0.59%	2.07%	0.44%	0.31%	0.87%	-1.93%	-0.46%	-1.73%	-1.60%	1.96%	0.38%	-1.89%	-1.08%
2014	0.53%	3.00%	-0.02%	0.46%	0.81%	1.15%	-1.17%	1.22%	-2.67%	0.80%	0.94%	-0.10%	4.94%
2013	3.01%	0.18%	1.83%	1.66%	1.92%	-2.17%	2.79%	-0.67%	1.81%	1.40%	-0.28%	1.68%	13.84%
2012	4.77%	2.35%	0.15%	-0.86%	-2.85%	2.23%	0.94%	1.79%	1.41%	-0.21%	0.53%	1.02%	11.66%
2011	1.76%	2.35%	0.41%	1.04%	0.29%	-1.58%	-1.49%	-4.02%	-3.70%	3.97%	-1.05%	0.58%	-1.73%
2010	-0.84%	1.99%	3.52%	2.12%	-3.58%	-1.92%	3.60%	0.46%	3.55%	2.41%	-0.05%	3.02%	14.90%
2009	2.26%	0.41%	3.46%	4.41%	2.85%	0.71%	6.59%	2.72%	3.51%	-1.38%	2.10%	3.19%	35.39%
2008	-0.47%	-0.55%	-1.56%	1.82%	0.59%	-2.50%	-1.30%	1.12%	-7.53%	-14.77%	-2.90%	6.42%	-20.82%
2007	1.04%	0.53%	-0.16%	0.94%	1.26%	-0.41%	-1.25%	-0.23%	2.21%	1.38%	-1.41%	-0.82%	3.05%
2006	2.27%	0.75%	1.62%	0.18%	-0.71%	-0.07%	0.51%	1.35%	1.27%	1.21%	1.34%	0.85%	11.06%
2005	-0.89%	0.10%	-1.99%	-1.58%	1.17%	1.51%	1.84%	0.93%	0.87%	-0.32%	1.04%	0.66%	3.31%
2004	2.64%	-0.16%	0.44%	-0.85%	-1.11%	0.81%	-2.60%	1.23%	0.02%	1.12%	1.80%	1.58%	4.91%
2003	3.09%	1.20%	1.97%	4.58%	4.36%	1.26%	-0.10%	0.48%	1.68%	3.43%	2.35%	2.41%	30.09%
2002	2.14%	-0.32%	3.37%	0.96%	-0.64%	-6.11%	-3.99%	1.78%	-0.63%	3.84%	4.86%	0.60%	5.44%
2001	8.97%	-1.84%	-1.64%	5.82%	2.18%	-0.93%	-0.57%	1.12%	-4.29%	4.44%	3.95%	0.72%	18.59%
2000	-2.03%	0.89%	3.69%	-0.29%	1.02%	1.44%	0.76%	2.64%	-0.85%	0.26%	-2.81%	3.38%	8.17%
1999	3.03%	-1.64%	0.81%	2.11%	0.16%	0.73%	2.90%	-0.91%	-0.02%	1.19%	0.60%	2.13%	11.55%
1998	1.47%	1.73%	1.16%	1.68%	-0.27%	0.26%	-1.15%	-5.77%	0.69%	1.73%	2.60%	1.86%	5.86%
1997	1.47%	0.51%	-1.50%	0.54%	2.73%	3.12%	3.93%	0.79%	1.40%	-0.98%	0.01%	0.31%	12.88%
1996	-	-	-	-	-	-	-	-	-	0.21%	1.39%	0.34%	1.94%

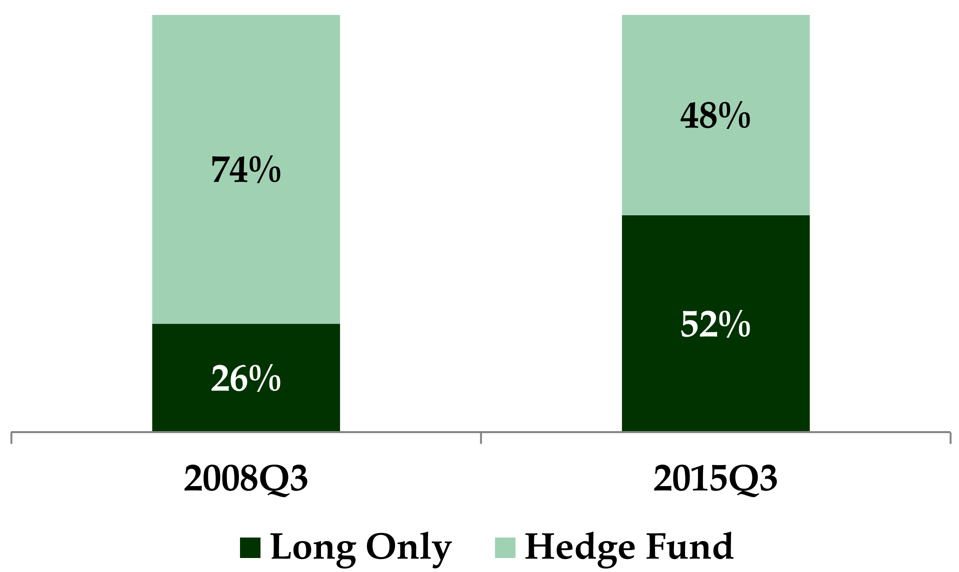
March 2016 performance is preliminary. The Phoenix Composite is the Phoenix Convertible Income Institutional Composite. Inception date of the Phoenix Composite was October 18, 1996. Please see the "Disclosures" section at the end of this presentation. Past performance is not a guarantee of future results.

IV. Convertible Market Update

The Composition of the Convertible Buyer Base Has Meaningfully Changed

- *Increased percentage of traditional, long-only investors provides stability to the market*
- *Fewer players in convertible arbitrage allows for LESS competition and MORE Inefficiencies*

Healthy Ownership between HFs and Outright



Source: Barclays Capital

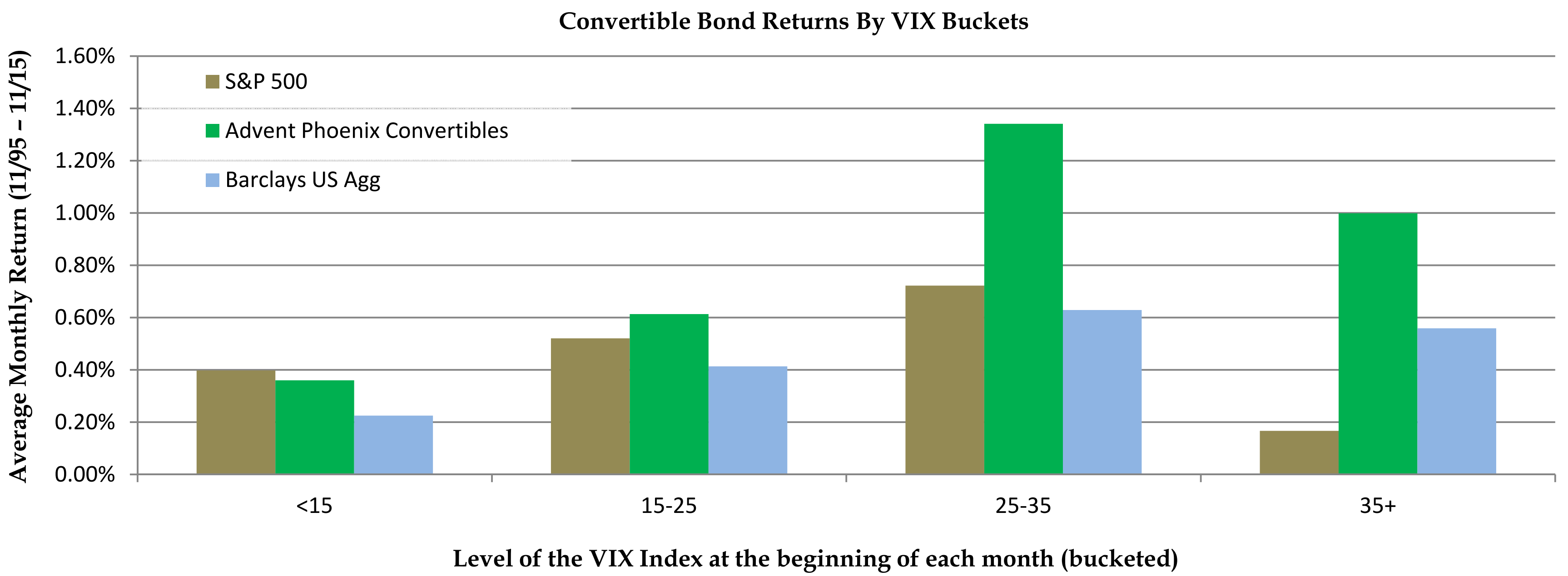
Convertibles Have Undergone a Positive Structural Transformation

- The convertible market is now close to USD 400 billion globally and approximately USD 190 billion in the US*.
- Liquidity and diversification have increased substantially with the growth of the market. The quality of issuers has also improved as over 20% of global convertibles are investment grade rated and the vast majority of the market is large cap (>$5 billion market cap) or mid cap (>$1 billion market cap).
- Convertibles have a broad cross-over investor base which lends support to the asset class. Both traditional fixed-income and equity investors have the ability to utilize convertibles, unlike other asset classes such as bank loans.
- Key drivers that make the current convertible market attractive:
    - More higher coupon convertibles in place of new issues with low or zero coupons
    - Shorter maturities from 25-30 years to 5-7 years on average which enhance downside protection
    - Extended call protection up to 5-7 years in many cases from 2-3 years
    - Common use of ratchet and dividend protection features that protect investors from the negative impact of takeovers and dividend increases
    - Conversion premiums on new issues have come significantly lower allowing for greater participation in the upside of the underlying stock

…but are still an overlooked asset class

**Source: UBS Convertible Research/MACE as of February 29, 2015*

Convertibles Have Outperformed Equities and Fixed Income in Periods of Higher Volatility



Our Phoenix Strategy has performed better than equities and fixed income in periods of higher equity volatility. As volatility rises, the convertible's embedded equity option becomes more valuable.

Source: Bloomberg. Advent Phoenix Convertible returns are that of the Phoenix Convertible Income Institutional Composite. Please see the "Disclosures" section at the end of this presentation. Past performance is not a guarantee of future results.

Convertibles Attractive vs. Core Fixed Income

We no longer see great value in core fixed income, as 10 Year Treasury yields remain below 3%, with a 9 year duration. On a relative basis, convertibles look attractive versus core fixed income:

	Convertibles (VXA0)	Core Fixed Income (Barclays Agg)
Current Yield	3.4%	3.0%
Duration	2.3 Years	5.3 Years

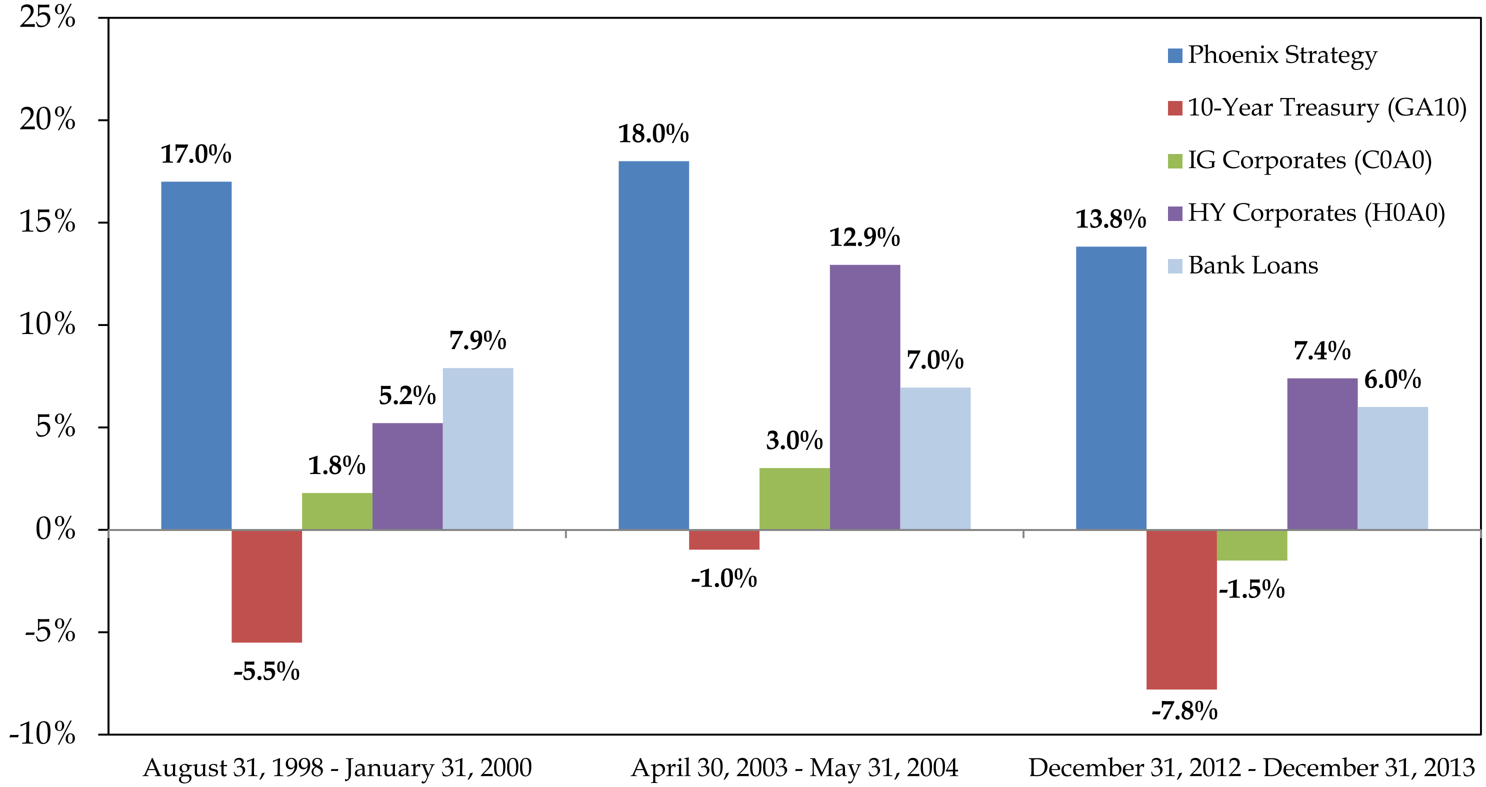
Convertibles have an attractive current yield and the added benefit of optionality. Convertibles also have a short duration, which means that as interest rates rise, convertibles should outperform longer duration bonds of equivalent credit quality.

Moreover, in a stable to improving economy that has typically accompanied rising interest rates, equities have historically done well, and convertibles have participated in this upside. Furthermore, against a backdrop of continued macro uncertainty, convertible securities offer attractive current yield and a defensive way to participate in further equity returns.

Data is as of February 29, 2016. VXA0 is the Bank of America Merrill Lynch All U.S. Convertibles Index. Barclays Agg is the Barclays Capital U.S. Aggregate Bond Index.

ADVENT CAPITAL MANAGEMENT, LLC

Advent's Phoenix Strategy Outperformed Many Other Fixed Income Investments in Periods of Rising Interest Rates

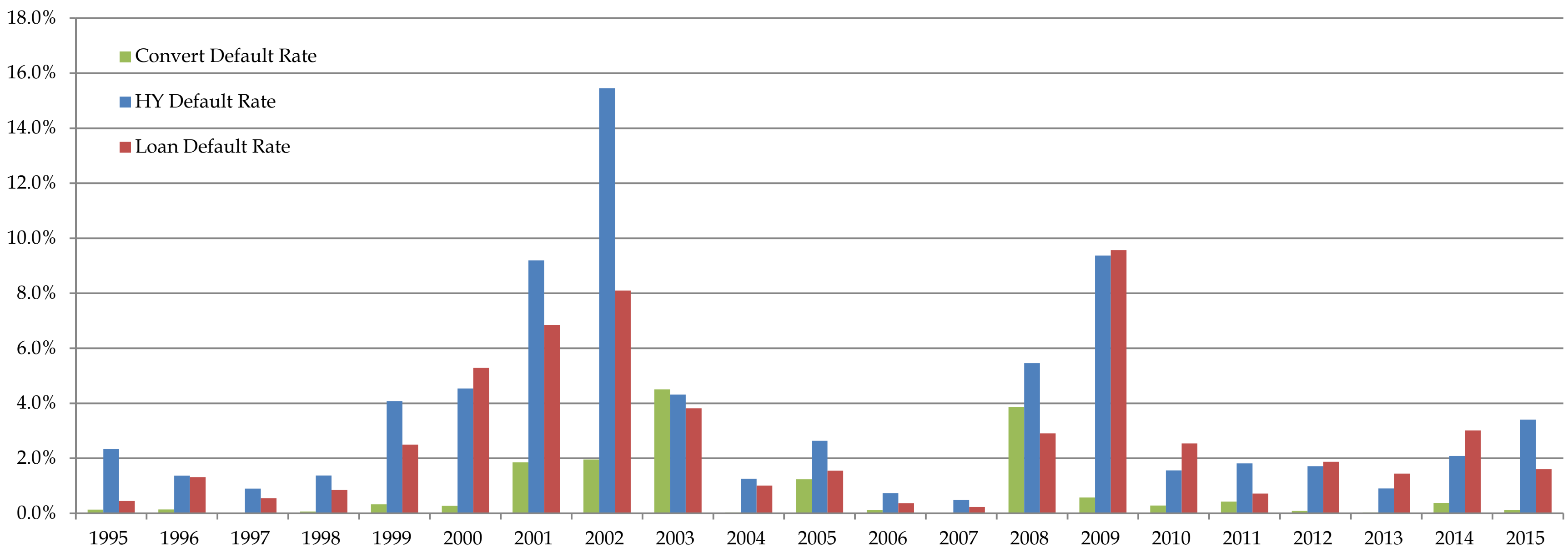


Rise in 10-Year Treasury Yield	170 bps	81 bps	127 bps

Sources: BofA Merrill Lynch Convertible Research; www.federalreserve.gov; Bloomberg, Credit Suisse; Wall Street Journal article "How to Play Rising Rates" October 2, 2010. Phoenix Strategy is the Phoenix Convertible Income Strategy. GA10 is the Bank of America Merrill Lynch Current 10-Year U.S. Treasury Index. C0A0 is the Bank of America Merrill Lynch Corporate Master Index. H0A0 is the Bank of America Merrill Lynch High Yield Master II Index. Bank loan performance is represented by the Credit Suisse Institutional Leveraged Loan Index. Please see the "Disclosures" section at the end of this presentation. Past performance is not a guarantee of future results.

Default Rate Comparison

Convertible securities have had a much lower default rate than both high yield bonds and leveraged loans



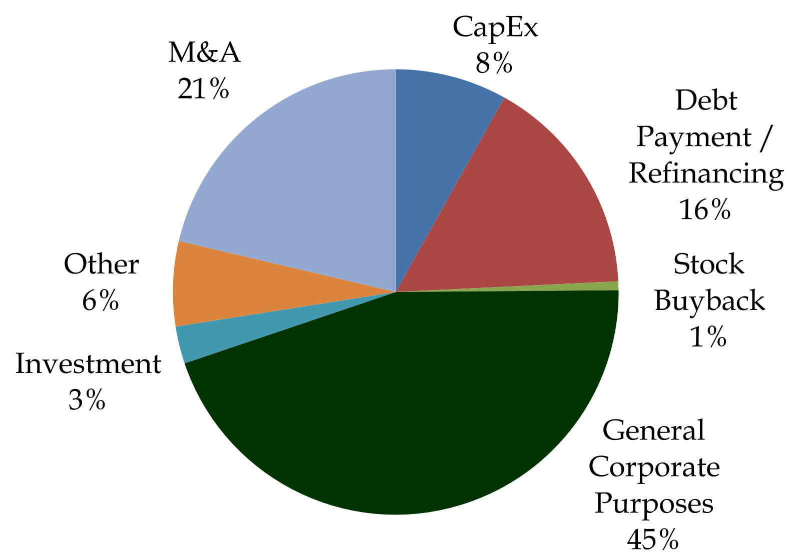
High Yield Average Default Rate	Loan Average Default Rate	Convertible Average Default Rate
3.57%	2.69%	0.78%

Primary Convertible Market

Convertible Issuance

- Year-to-date, total issuance has been $10 billion. 2015 marked the third consecutive year of net new issuance in the global convertible market.
- An average of 300 deals have been brought to market in each of the last five years. This significant level of new issuance requires a large and experienced global convertible team to monitor and evaluate each security both pre and post issuance.
- Several of the new issues have come from small/mid-cap or non-rated issuers, and in these instances, deep credit research is able to add significant value by identifying which credits are stable to improving with attractive prices.
- In 2016, we anticipate that several catalysts may increase convertible issuance including refinancings, the potential rise in interest rates, stable equity valuations, and wide credit spreads in the high yield market. Continued M&A activity as well as companies seeking growth capital in an improving economy may also drive new issuance activity.

2015 Global Use of Proceeds



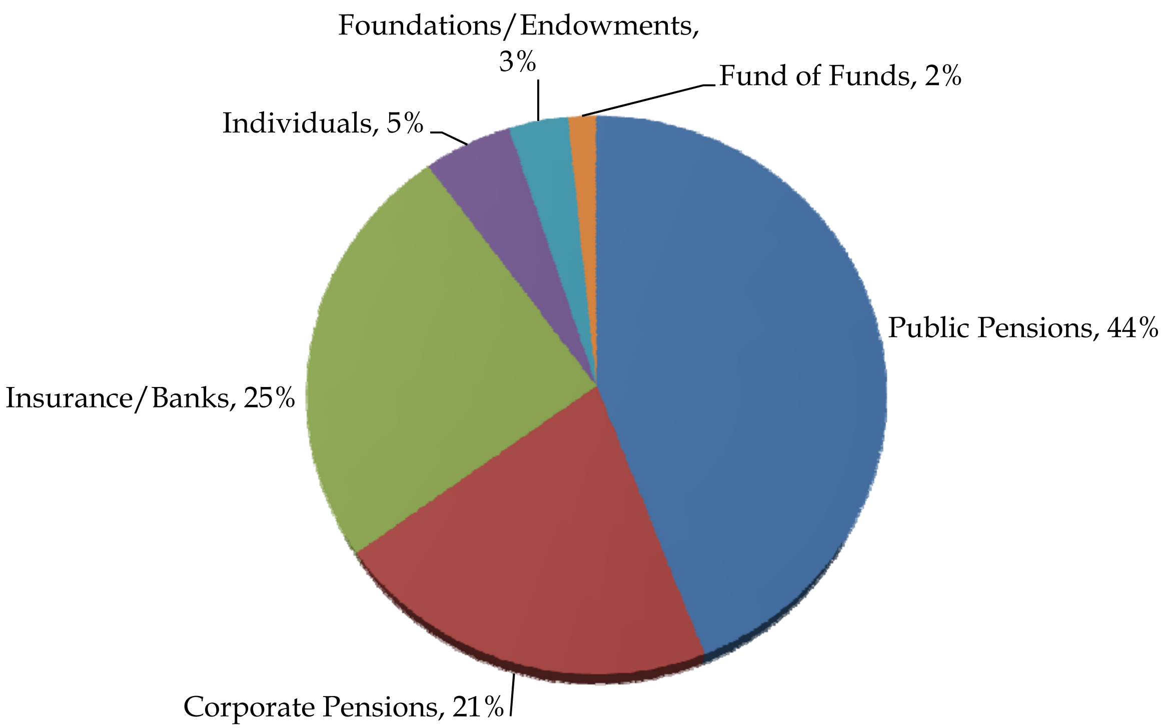
Source: Bank of America Merrill Lynch

Source: UBS Convertibles Marketing, as of February 29, 2016

A. Client Base

Asset Breakdown Across Strategies by Client Type

As of December 31, 2015



Excludes Mutual Fund Assets

Representative Client List

ADVENT
CAPITAL MANAGEMENT, LLC

British Virgin Islands Electricity Corporation
British Virgin Islands Social Security Board
City of Detroit Police and Fire Retirement System
Coverys
DeKalb County Pension Board
Domestic and Foreign Missionary Society
FFVA Mutual Insurance
Georgia Municipal Employees Benefit System
Guggenheim Funds
Helvetia Insurance
Independence Blue Cross
Kaiser Permanente

Maryland State Retirement & Pension System
Metropolitan Atlanta Rapid Transit Authority
NextEra Energy
New York City Retirement Plans
Nordrheinische Ärzteversorgung
Occidental Petroleum Corporation
Progress Investment Management
Russell Investments
San Francisco Employees' Retirement System
SYZ & Co
Verizon
West Midlands Pension Fund

Note: Many of Advent's largest institutional clients have requested that we not disclose their names publicly. The clients listed above have consented to their identification and were selected to provide a readily recognizable set of institutional investors for which we manage portfolios. It is not known whether the listed clients approve or disapprove of Advent or the advisory services we have provided.

B. Disclosures

Disclosures

Firm Information:
Advent Capital Management, LLC (Advent) is an investment adviser registered with the Securities and Exchange Commission under the Investment Advisers Act of 1940. Advent is an independent, privately held limited liability company. Advent Capital Management UK Limited, a wholly-owned subsidiary of Advent located in London, is authorized and regulated by the U.K. Financial Conduct Authority. Advent specializes in global and domestic convertible, high yield, and event-driven strategies based on a credit focused investment process with offices in New York and London. Advent has approximately $8.4 billion in assets under management (as of 12/31/14). We manage institutional assets across long-only, hedge fund and closed end fund strategies. A list of all firm composites is available upon request.

Advent claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Advent has been independently verified for the period 9/30/95 – 12/31/14. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Phoenix Convertible Income Institutional Composite has been examined for the periods 10/18/96 - 12/31/14. The verification and performance examination reports are available upon request. Additional information regarding policies for valuing portfolios, calculating performance and preparing compliant presentations are available upon request. Past performance does not guarantee future results. This performance report should not be construed as a recommendation to purchase or sell any particular securities held in composite accounts. Market conditions can vary widely over time and can result in a loss of portfolio value. Performance reflects the reinvestment of dividends and other earnings.

Phoenix Convertible Income Institutional Composite

Year	Total Return Gross of Fees %	Total Return Net of Fees %	Primary Benchmark: BofA Merrill Lynch Yield Alternatives Index %	Secondary Benchmark: BofA Merrill Lynch All Convertibles Excluding Mandatories Index %	Number of Portfolios	Dispersion %	Total Composite Assets End of Period ($MM)	Total Firm Assets End of Period ($MM)
2005	3.31	2.33	-3.02	-0.34	4	0.15	115.6	2,759.7
2006	11.05	10.24	10.96	12.75	5	0.14	191.2	3,119.1
2007	3.06	2.39	-0.96	4.10	6	0.10	373.6	4,252.4
2008	-20.83	-21.23	-27.67	-33.02	7	0.06	457.5	2,930.1
2009	35.39	34.49	46.25	47.18	9	0.25	762.6	4,838.4
2010	14.90	14.21	12.99	16.52	10	0.14	893.4	5,799.9
2011	-1.73	-2.29	-1.73	-3.41	10	0.31	1,047.6	5,537.9
2012	11.66	11.03	12.21	14.41	9	0.04	1,204.2	6,092.1
2013	13.83	13.20	10.33	25.00	9	0.03	1,356.2	7,591.3
2014	4.94	4.36	2.75	9.33	13	0.07	1,958.1	8,427.9

Composite Characteristics:
1) Advent's Phoenix Convertible Income Institutional Composite (Composite) consists of the following:

- Inception of the Composite was October 18, 1996 and the creation of the Composite was September 2006.
- From inception to August 31, 2001, the performance of the Composite represents that of the ACM Phoenix Convertible Income Fund, a limited partnership managed since October 18, 1996. The fund was comprised of accredited investors that could not invest in Rule 144A securities. The ACM Phoenix Convertible Income Fund is no longer inclusive in the Composite as of August 31, 2001.
- The Composite was redefined as an Institutional composite with inception of the first managed account in the strategy on September 1, 2001.
- No leverage or derivatives are used in the strategy.
- All accounts included in the Composite invest in convertible securities that trade near their bond floors and provide positive asymmetry.

Disclosures

- As of 12/31/11, the 3-year ex-post standard deviation for the Composite was 8.55%. BofA The Merrill Lynch Yield Alternatives Index (VYLD) 3-year ex-post standard deviation was 8.93%. The BofA Merrill Lynch All Convertibles Ex. Mandatories Index (V0A0) 3-year ex-post standard deviation, as of the same date, was 12.20%.
- As of 12/31/12, the 3-year ex-post standard deviation for the Composite was 7.72%. The BofA Merrill Lynch Yield Alternatives Index (VYLD) 3-year ex-post standard deviation was 6.12%. The BofA Merrill Lynch All Convertibles Ex. Mandatories Index (V0A0) 3-year ex-post standard deviation, as of the same date, was 10.15%.
- As of 12/31/13, the 3-year ex-post standard deviation for the Composite was 6.84%. The BofA Merrill Lynch Yield Alternatives Index (VYLD) 3-year ex-post standard deviation was 5.69%. The BofA Merrill Lynch All Convertibles Ex. Mandatories Index (V0A0) 3-year ex-post standard deviation, as of the same date, was 9.09%.
- As of 12/31/14, the 3-year ex-post standard deviation for the Composite was 5.51%. The BofA Merrill Lynch Yield Alternatives Index (VYLD) 3-year ex-post standard deviation was 4.71%. The BofA Merrill Lynch All Convertibles Ex. Mandatories Index (V0A0) 3-year ex-post standard deviation, as of the same date, was 7.63%.

2) The following is the criteria for inclusion in the Composite:

- All new accounts are included at the start of the measurement period following the date the portfolio begins being managed. This is true except when an account is the first account to enter the composite, in which case the account enters the composite immediately. Prior to January 1, 2011 performance periods are on a quarterly basis, ending 3/31, 6/30, 9/30, 12/31 each year. After January 1, 2011 performance periods are on a monthly basis. This is true except when an account is the first account to enter the composite, in which case the account enters the composite immediately.
- Through 12/31/10, portfolios that were terminated were excluded from the Composite after the last full quarter the portfolio was under management. After 12/31/10, portfolios that are terminated will be excluded from the Composite after the last full month the portfolio was under management.
- Through 3/31/11, all accounts must have had an initial account value of at least $5,000,000. As of 04/01/11, all account must have an initial account value of at least $3,000,000.
- The Composite will include only those portfolios which meet its investment objective.
- The Composite will be composed of all accounts that meet the criteria to invest in Rule 144A securities.
- The Composite does not include accounts of investors who are not Qualified Institutional Buyers due to their inability to invest in Rule 144A securities.

3) The following pertains to performance results:

- All performance is presented in U.S. Dollars.
- Returns for the Composite are presented both gross of fees and net of actual management fees paid by the Advent accounts but not expenses paid by the clients. The Phoenix Institutional advertised fee schedule is 1% on the first 25 million, 0.80% on the next 25 million, 0.65% on the next 50 million and 0.55% over 100 million. Fees may be subject to negotiation where special circumstances warrant. The management fees are described in Part 2 of Advent's Form ADV. Returns presented on a gross basis are substantially higher than returns presented on a net basis because gross returns do not reflect the deduction of investment advisory fees and other expenses that would be incurred by a client. Investment advisory fees have a compounding effect in reducing the value of a client portfolio over time.
- Past performance is not necessarily indicative of future results.

4) Benchmark Information:

- The Composite is benchmarked to the BofA Merrill Lynch Yield Alternatives Index. The benchmark is defined as convertible securities with deltas less than 40%. Advent uses the BofA Merrill Lynch All Convertible Index excluding Mandatories as a secondary benchmark because it's track record dates back to the inception of the Composite.
- Benchmark returns are not covered by the report of the independent verifiers.

Calculation Methodology:
Advent calculates an asset-weighted return using the aggregate method. This method aggregates market values and cash flows for all accounts and treats the Composite as if it were one account. The dispersion measure is the asset-weighted standard deviation for accounts in the composite for the entire year.

Callan

April 22, 2016

ARMB Board Meeting

Investment Performance
(FINAL Real Estate)
Periods Ended December 31, 2015

Paul Erlendson
Senior Vice President

Steve Center, CFA
Vice President

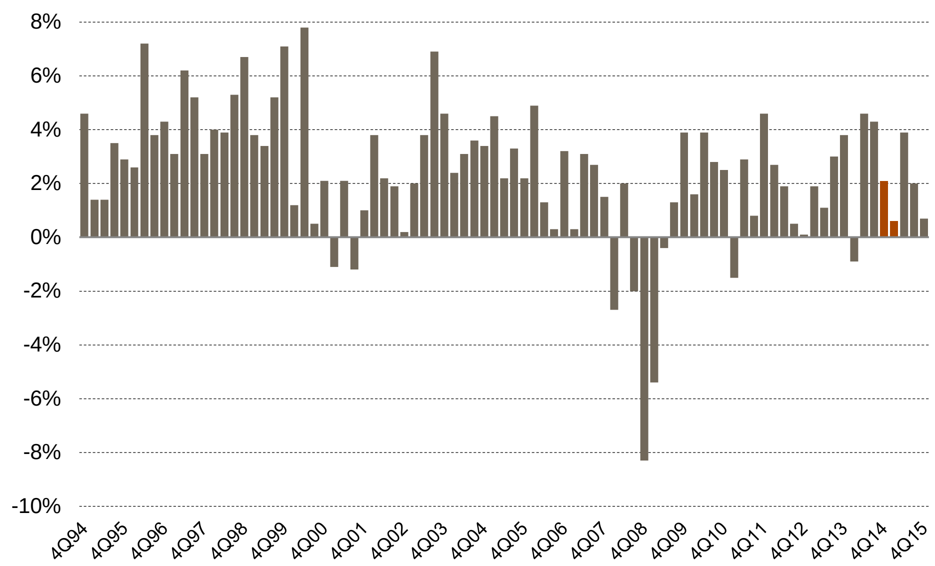
Agenda

- Market and Economic Environment
- Total Fund Performance
  - Major Asset Classes
- Review of Major Activities

U.S. Economy

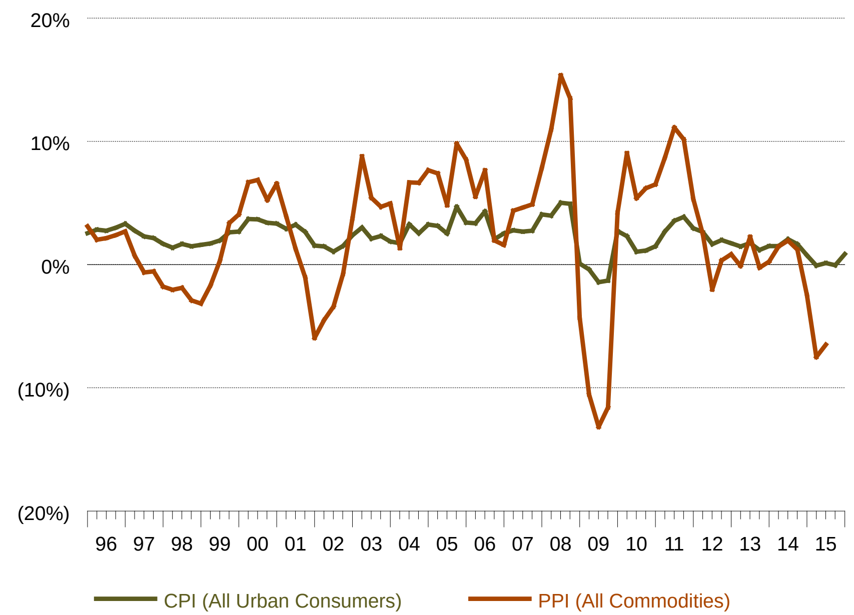
Periods Ending December 31, 2015

Quarterly Real GDP Growth (20 Years)*



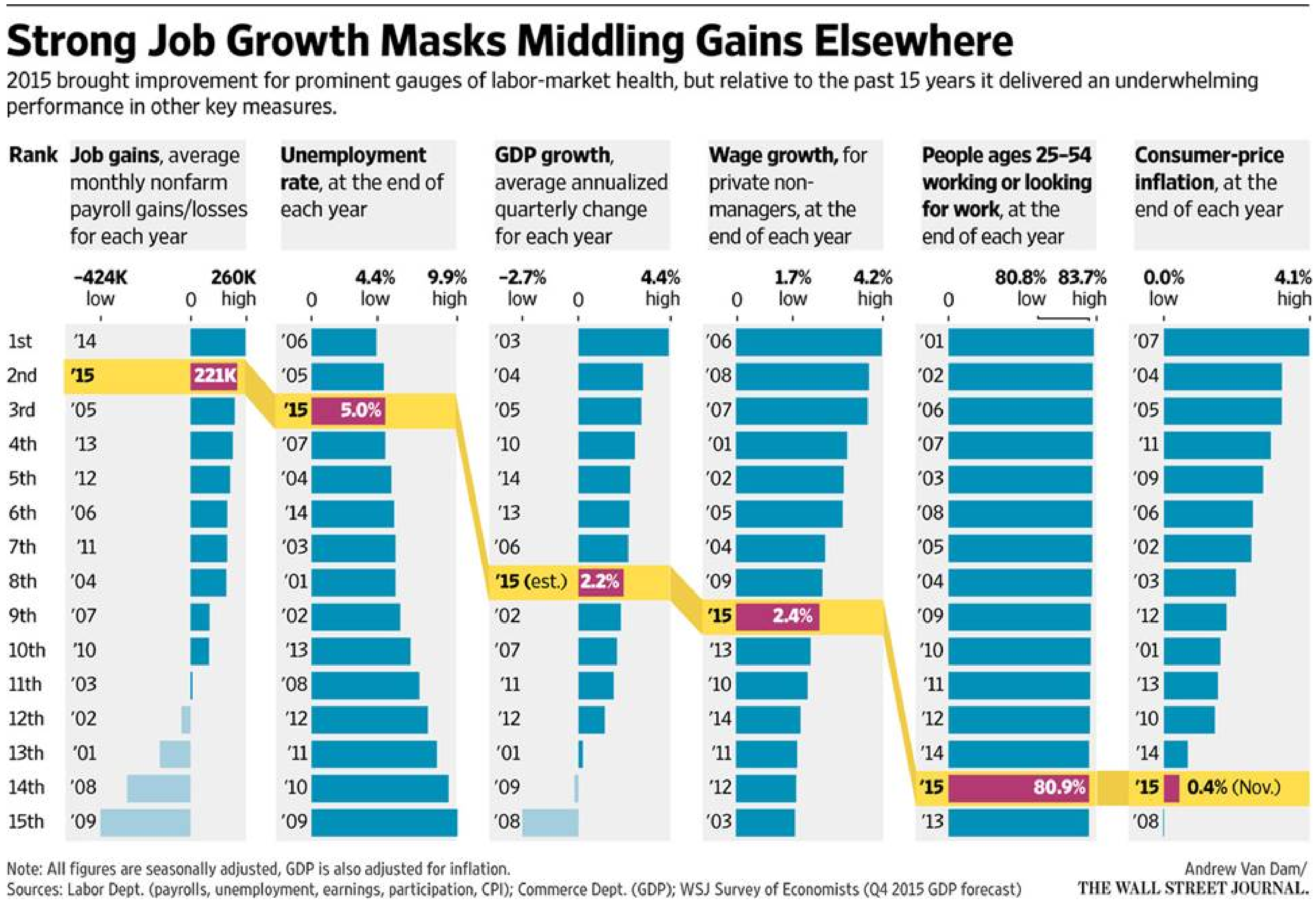
Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

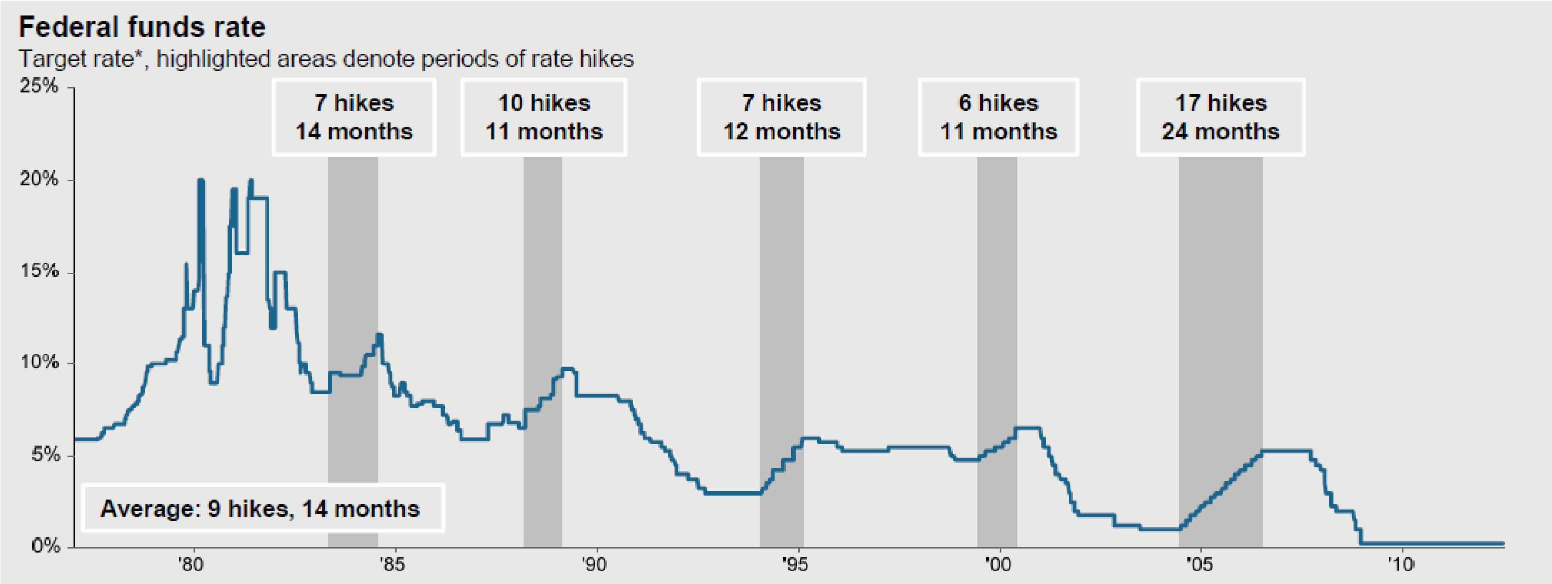
- Initial estimates show the U.S. economy grew at 0.7% in the fourth quarter, up 2.4% for 2015.
- December headline inflation was up 0.7% year over year, core inflation rose 2.1%.
- The unemployment rate was 5.0% at quarter end, down 0.6% from the start of the year.
- Payroll growth increased with an average addition of 284,000 jobs per month in 4Q15, up from 174,000 in 3Q15. Wages ended the year up 2.5% from January 2015.
- WTI oil price is down 30.5% from the start of 2015.



Source: WSJ

- Despite strong job gains, the labor force participation rate remains near 38 year low indicating possible slack in the labor market despite the low unemployment rate.
- Wage growth has slowed significantly since 2008.
- Net job creation in some sectors, such as Government, is negative since February 2010.

The Fed Raises Rates



Market reaction during previous rate hiking cycles

	May 1983 – July 1984	March 1988 – February 1989	February 1994 – February 1995	June 1999 – May 2000	June 2004 – June 2006	Average
Change in interest rates						
Federal funds rate	3.13%	3.25%	3.00%	1.75%	4.25%	3.08%
2-year Treasury	3.11%	2.27%	3.05%	1.21%	2.38%	2.40%
10-year Treasury	2.74%	0.85%	1.89%	0.49%	0.51%	1.30%
S&P 500 return	-9.6%	6.8%	-2.1%	8.5%	12.0%	3.1%
U.S. dollar	10.4%	1.7%	-4.8%	3.4%	-5.8%	1.0%

Source: FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management.

Source: JP Morgan: Guide to the Markets

- At their December 16th meeting, the FOMC voted to move from their zero interest rate policy and increased the fed funds rate by 0.25%.
- The average S&P500 return across previous tightening cycles is 3.1%, skewed by the 9.6% loss during the 1983-1984 cycle.

Asset Class Performance

- S&P 500 was the best performer last quarter, returning 7.0%.
- The Russell 2000 rose 3.6% last quarter and remains a solid performer over the last three, five, and 10 years.
- Barclays Aggregate was the worst performer in fourth quarter (-0.6%).
- Developed international equities staged a comeback last quarter (+4.7%) but didn't quite make it out of negative territory for the year (-0.8%).
- Emerging markets rose 0.7% last quarter, but is still the worst performer over the one, three, and five year time frames.

	March	YTD (04/01/16)
Russell 3000	7.0%	1.6%
S&P 500	6.8%	2.0%
Russell 2000	8.0%	-1.2%
MSCI EAFE	6.5%	-5.1%
MSCI EM	13.2%	4.4%
BC Aggregate	0.9%	3.0%

Periodic Table of Investment Returns
for Periods Ended December 31, 2015

Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
S&P:500 7.0%	S&P:500 1.4%	S&P:500 15.1%	S&P:500 12.6%	S&P:500 7.3%
MSCI:EAFE US$ 4.7%	BC:Aggregate 0.5%	Russell:2000 Index 11.7%	Russell:2000 Index 9.2%	Russell:2000 Index 6.8%
Russell:2000 Index 3.6%	3 Month T-Bill 0.1%	MSCI:EAFE US$ 5.0%	MSCI:EAFE US$ 3.6%	BC:Aggregate 4.5%
MSCI:Emer Markets 0.7%	MSCI:EAFE US$ (0.8%)	BC:Aggregate 1.4%	BC:Aggregate 3.2%	MSCI:Emer Markets 3.9%
3 Month T-Bill 0.0%	Russell:2000 Index (4.4%)	3 Month T-Bill 0.1%	3 Month T-Bill 0.1%	MSCI:EAFE US$ 3.0%
BC:Aggregate (0.6%)	MSCI:Emer Markets (14.6%)	MSCI:Emer Markets (6.4%)	MSCI:Emer Markets (4.5%)	3 Month T-Bill 1.2%

U.S. Equity Style Returns

Periods Ending December 31, 2015

	4Q 2015		
	Value	Core	Growth
Large	5.6%	6.5%	7.3%
Mid	3.1%	3.6%	4.1%
Small	2.9%	3.6%	4.3%

	Annualized 1 Year Returns		
	Value	Core	Growth
Large	-3.8%	0.9%	5.7%
Mid	-4.8%	-2.4%	-0.2%
Small	-7.5%	-4.4%	-1.4%

Represents 3 best performing asset classes in time period

Represents 3 middle performing asset classes in time period

Represents 3 worst performing asset classes in time period

- Last Quarter: Large cap performed best. Small caps suffered most.
- Last Year: Growth was best across all market cap ranges, followed by core and then value.

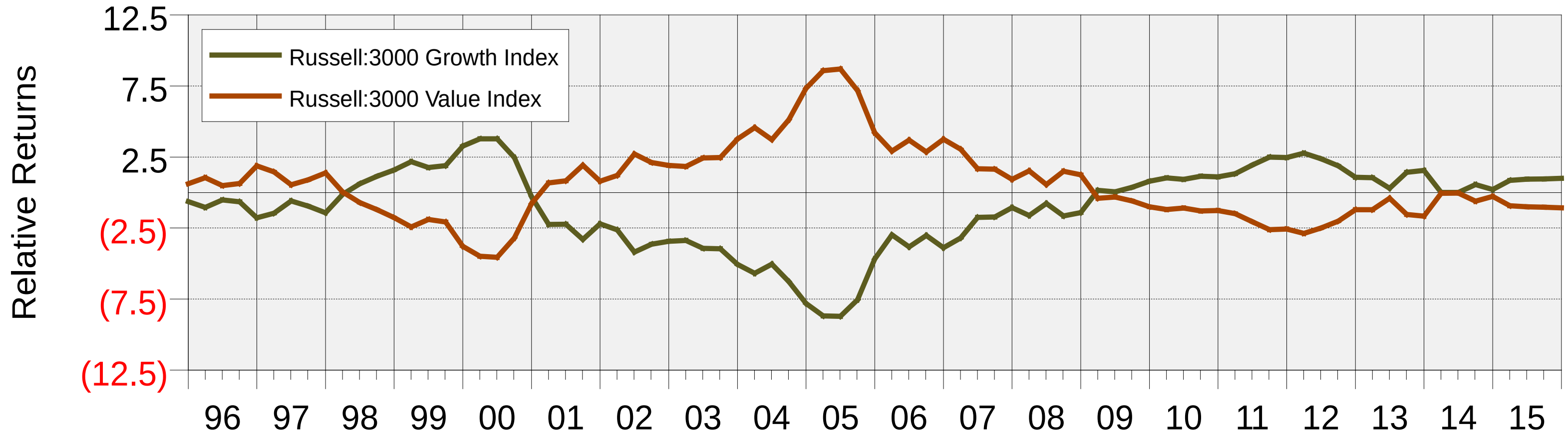
Large Cap Core is represented by the Russell 1000 Index, Large Cap Value is represented by the Russell 1000 Value Index and Large Cap Growth is represented by the Russell 1000 Growth Index. Mid Cap Core is represented by the Russell Midcap Index, Mid Cap Value is represented by the Russell Midcap Value Index and Mid Cap Growth is represented by the Russell Midcap Growth Index. Small Cap Core is represented by the Russell 2000 Index, Small Cap Value is represented by the Russell 2000 Value Index and Small Cap Growth is represented by the Russell 2000 Growth Index.

Capital Markets Performance

Seven years running: Growth exceeds Value style

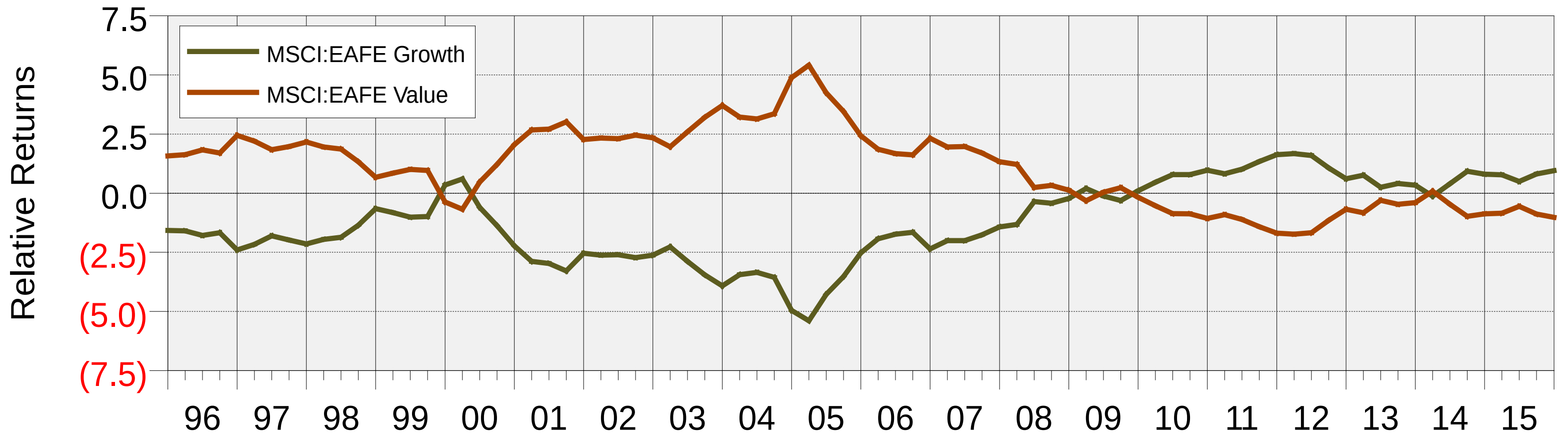
US Equities

Rolling 20 Quarter Relative Returns Relative To Russell:3000 Index
for 20 Years Ended December 31, 2015



Non-US
Developed Market
Equities

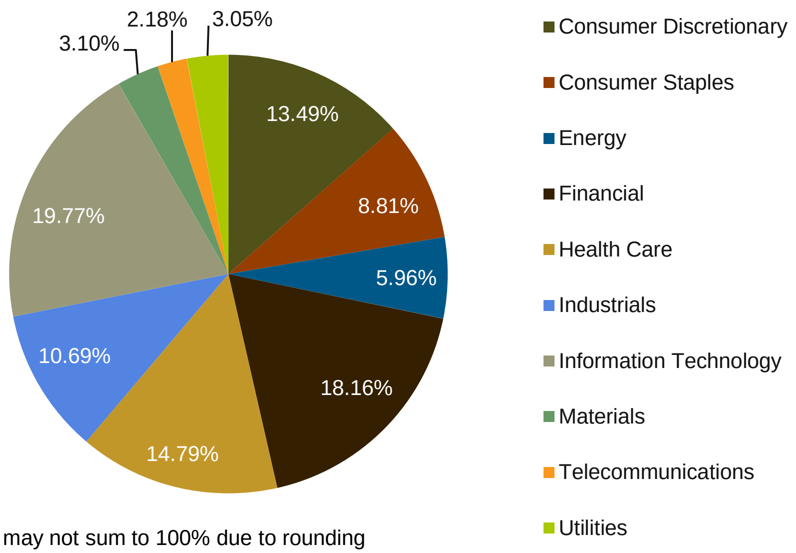
Rolling 20 Quarter Relative Returns Relative To MSCI:EAFE
for 20 Years Ended December 31, 2015



U.S. Equity Returns

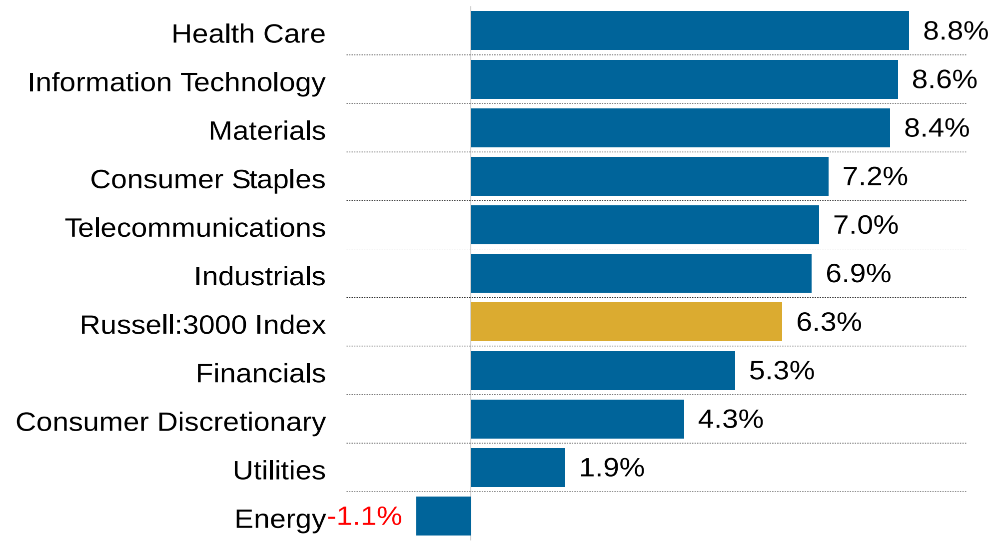
Periods Ending December 31, 2015

Economic Sector Exposure (Russell 3000)



Pie chart may not sum to 100% due to rounding
Source: Russell Investment Group

Quarterly Returns (Russell 3000)

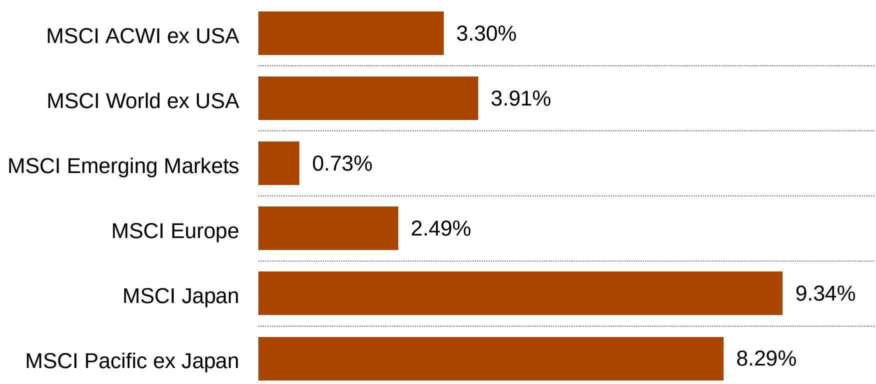


- For the quarter – in the RU 1000, large size and growth were the best performing factors. Information Technology and Materials were the highest returning sectors, Energy the worst.
- For the year, the RU 1000G >RU 1000V by over 9%, greatest spread since 2008. Similar for small cap, RU 2000G (-1.4%) and RU 2000V (-7.5%).
- In the RU 2000, Health Care (+9.7%), Information Technology (+6.8%), and Telecommunications (+6.3%) were the top performers. Energy was down 7.9%.

International Equity Returns

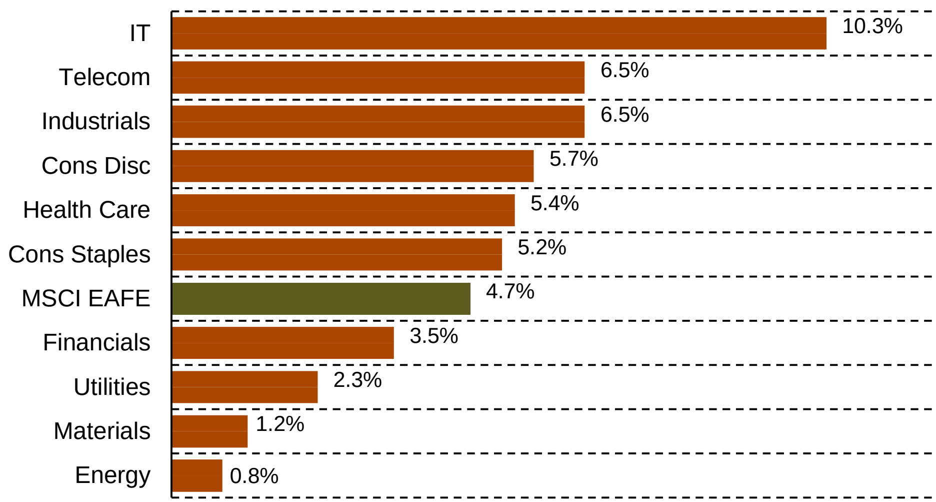
Periods Ending December 31, 2015

Regional Quarterly Performance (U.S. Dollar)

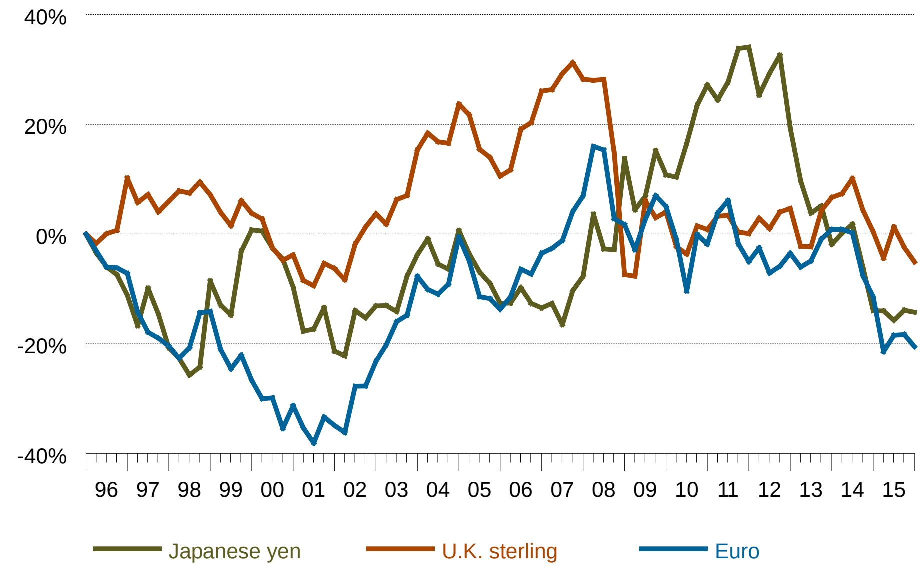


Source: MSCI

MSCI EAFE Sector Returns



Major Currencies' Cumulative Returns (vs. U.S. Dollar)



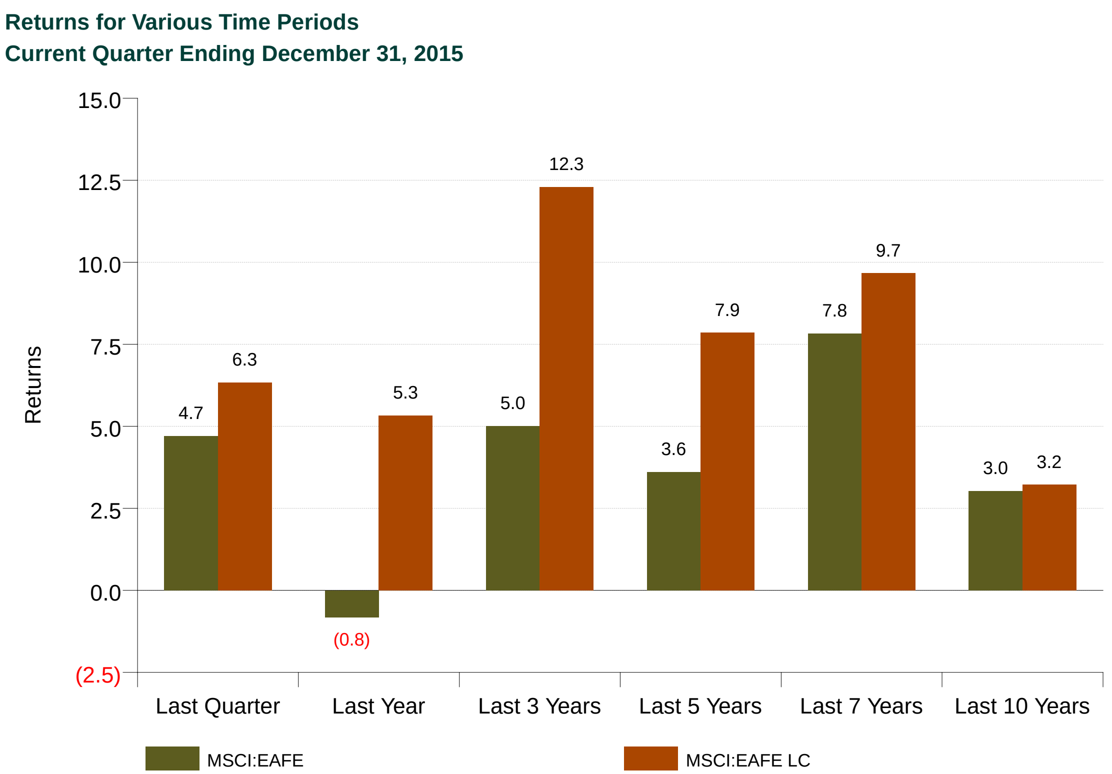
*Euro returns from 1Q99. German mark prior to 1Q99.
Source: MSCI

- Best performing region was Japan (+9.3%), emerging markets continue to lag.
- The pound and the euro depreciated vs the dollar.
- Information Technology performed best while Energy and Materials lagged.

Source: Barrow Hanley Quarterly Benchmark Review

Domestic vs. Local Currency Returns

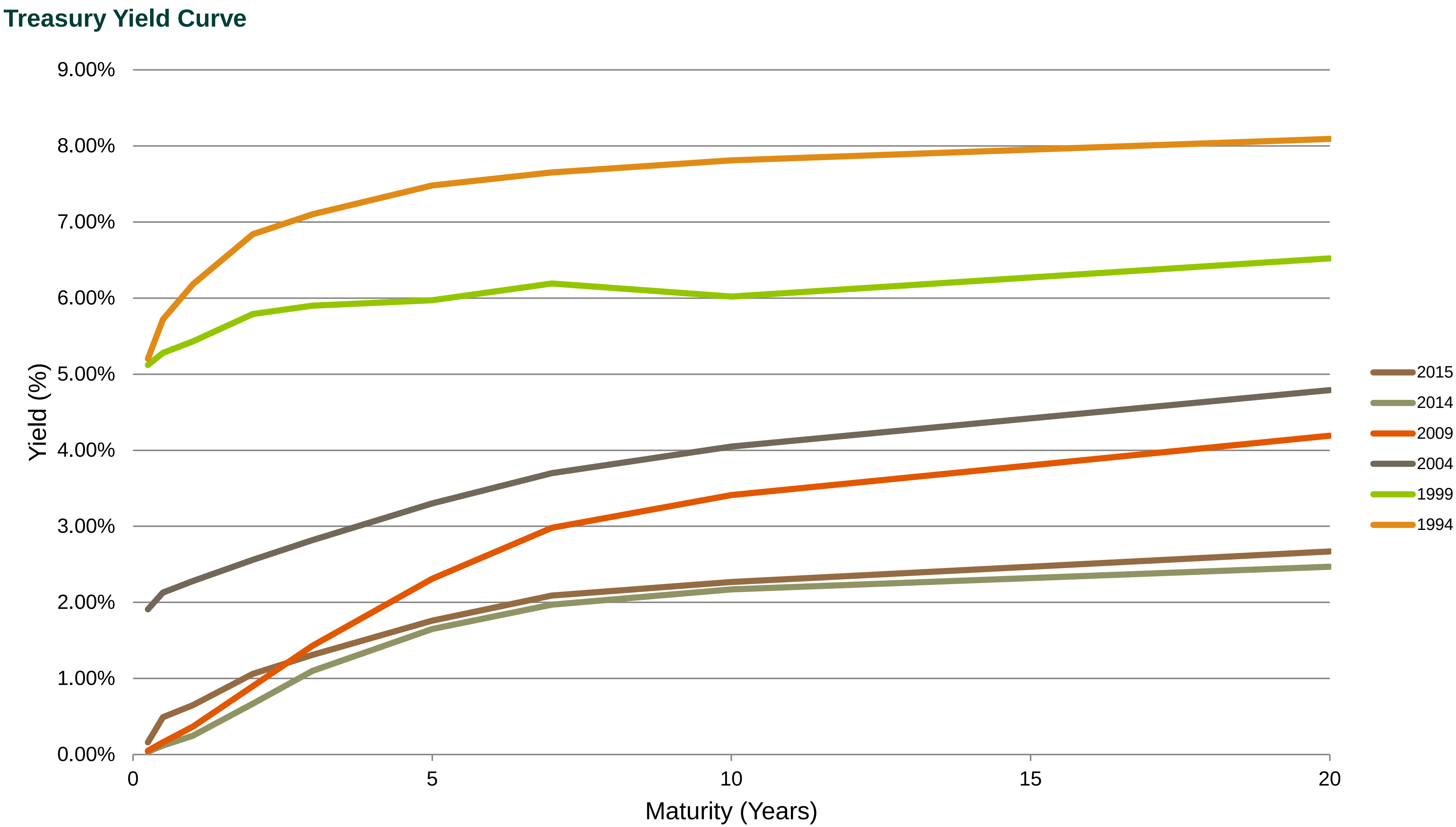
Currency Effect on U.S. Investors' International Equity Returns



- For the quarter, U.S. investors' international equity returns were hurt by the strengthening U.S. dollar. Additionally, over the last year the dollar has cost U.S. investors 6.1%.
- For the last 10 years, the U.S. dollar has depreciated against most foreign currencies.

Historic Yield Curves

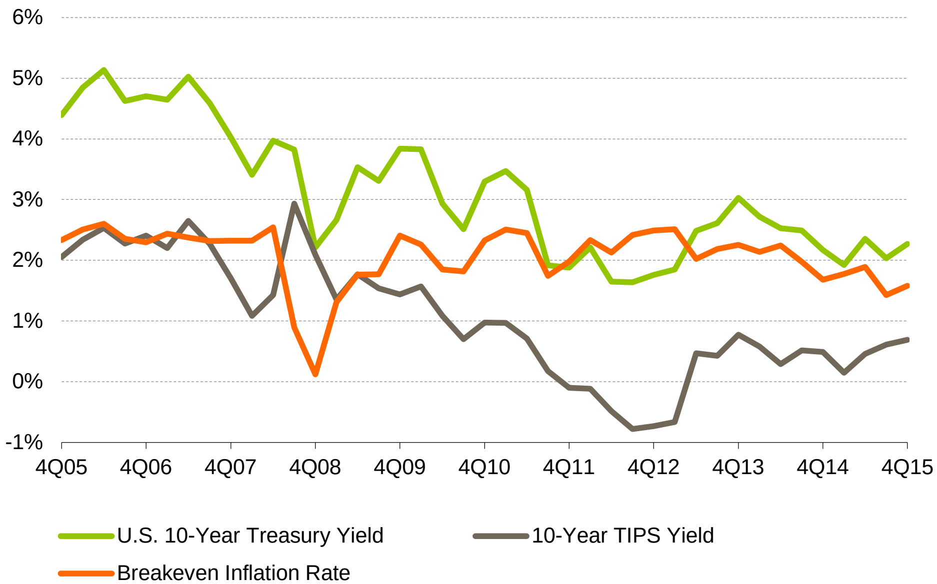
As of December 31, 2015



Yield Curve Changes

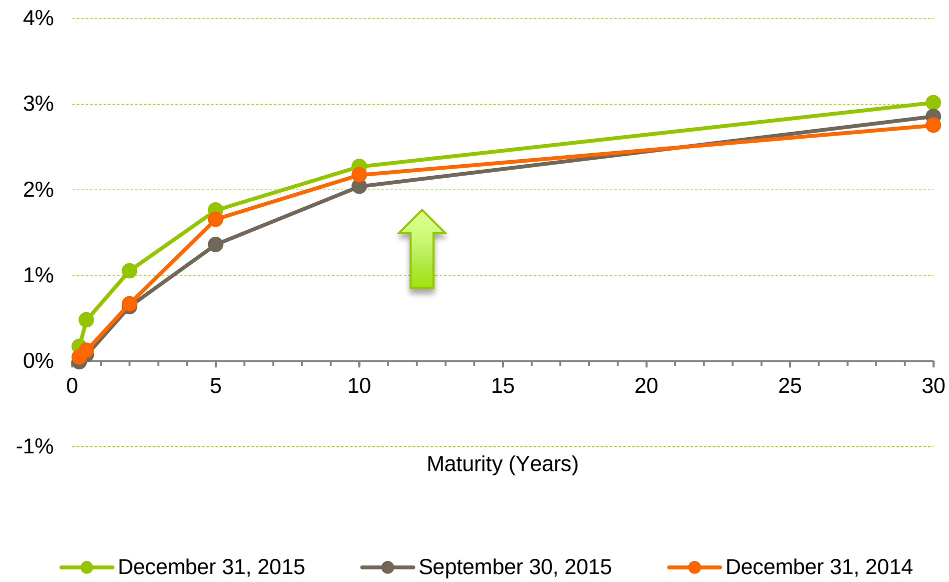
Periods Ending December 31, 2015

Historical 10-Year Yields



Source: Bloomberg

U.S. Treasury Yield Curves



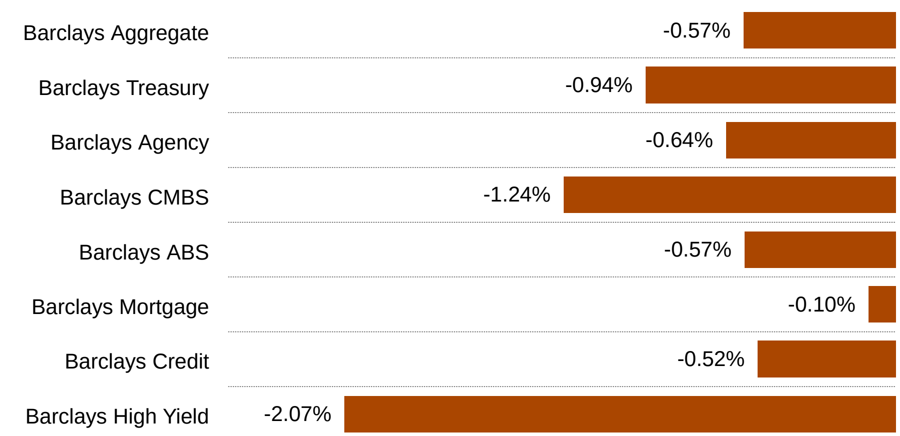
Source: U.S. Department of the Treasury

- The yield curve shifted upward and flattened throughout the quarter. The three-, 10-, and 30-year Treasuries rose 39, 22, and 14 bps, respectively.
- The breakeven inflation rate rose 15 bps to 1.58%.
- The Barclays US TIPS Index fell 0.64%.

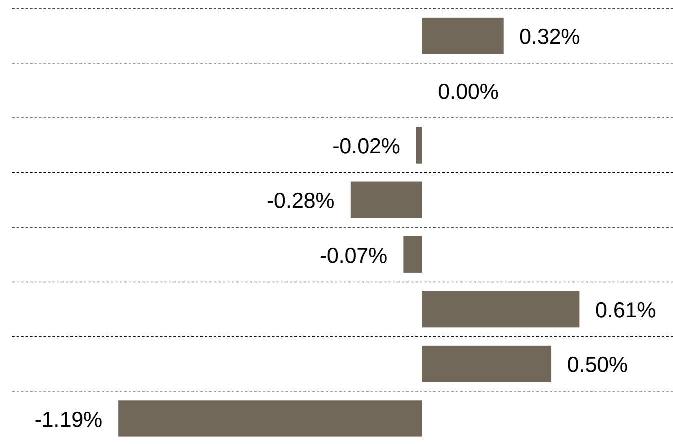
Total Rates of Return by Bond Sector

Periods Ending December 31, 2015

Absolute Returns for Quarter ended December 31, 2015

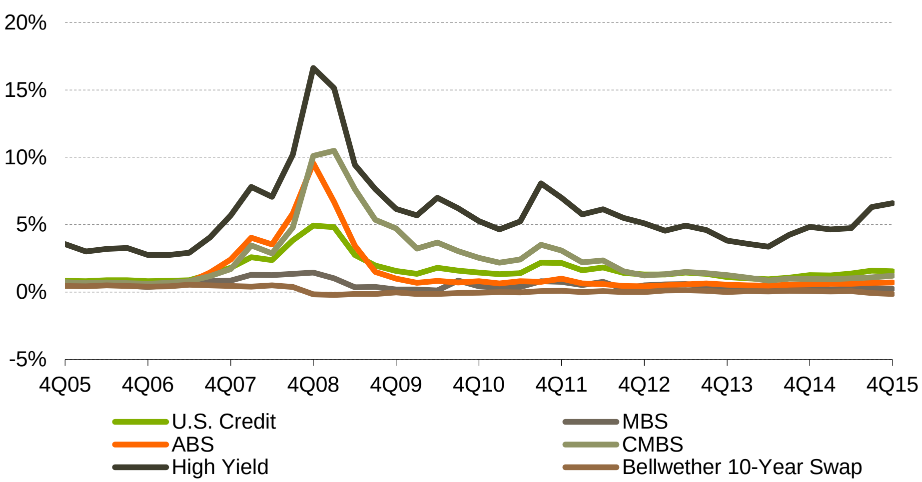


Excess Return versus Like-Duration Treasuries



Source: Barclays

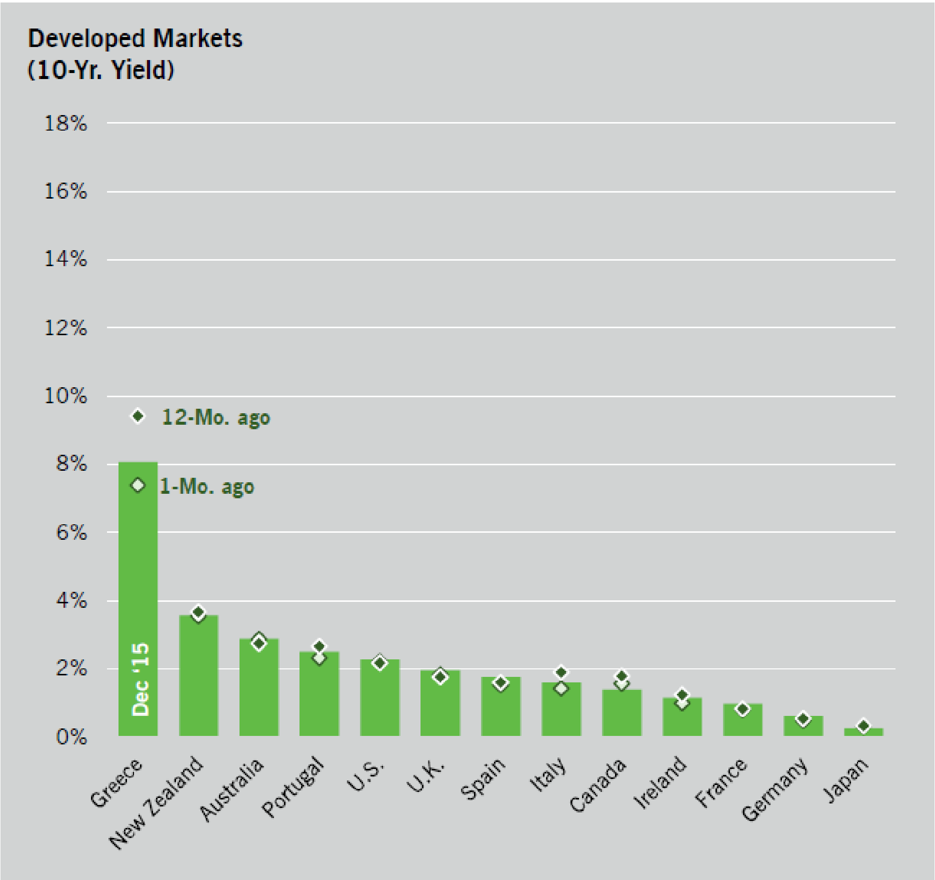
Effective Yield Over Treasuries

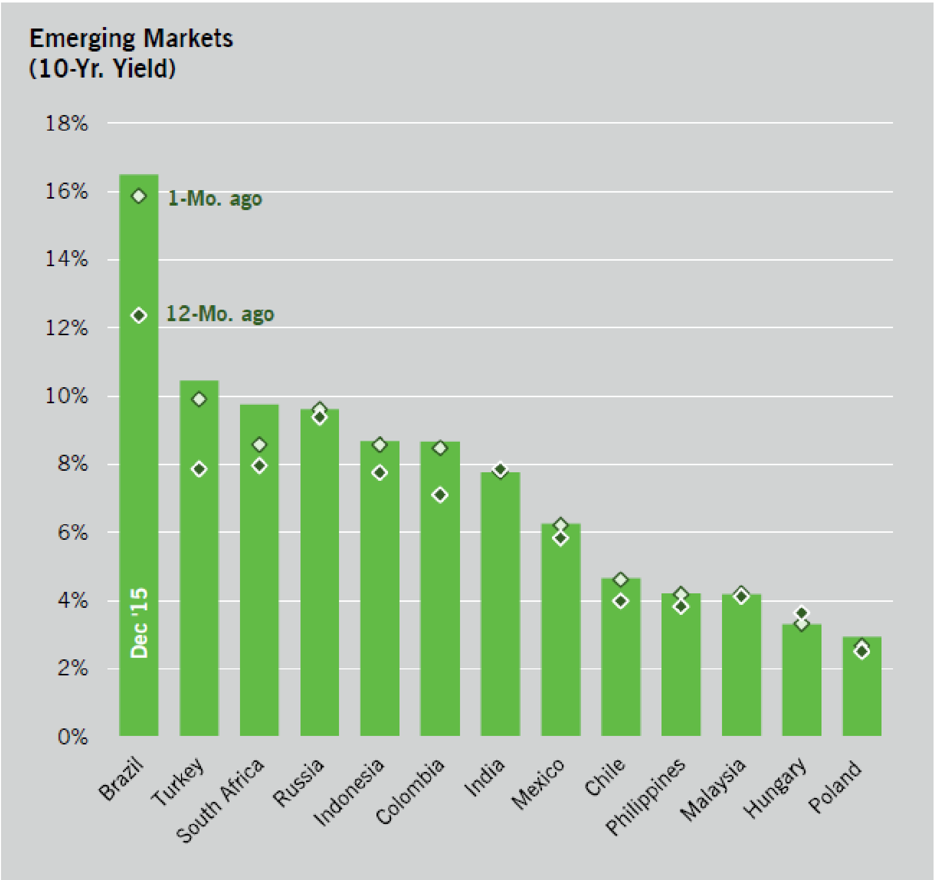


- Despite negative absolute return, corporates and mortgages outperformed like-duration Treasuries due to spread compression.
- High yield spreads widened 30 bps leading to a 1.19% underperformance of like-duration Treasuries.

Sovereign Bonds

Yields as of 12/31/2015





- US 10-year yields look quite generous relative to the rest of the developed world.
  – Developed market yields are generally lower than one year ago.
- Emerging market bond yields are generally higher than one year ago (currency risk).

Source: Eaton Vance, Bloomberg.

Real Estate

Style medians and index returns

Style Median and Index Returns* for Periods ended December 31, 2015

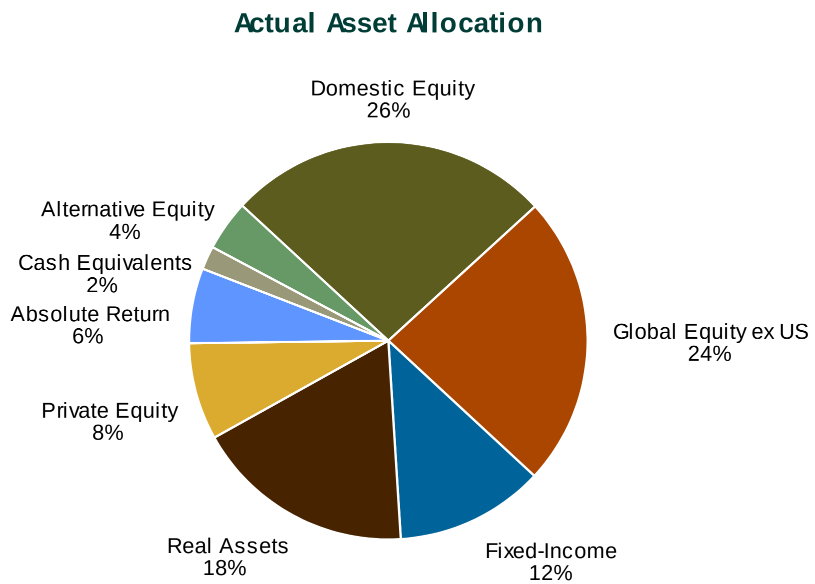
Private Real Estate	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years
Real Estate Database (net of fees)	2.90	12.90	12.90	12.97	12.60	5.47	7.90
NCREIF Property**	2.91	13.33	13.33	12.04	12.18	7.76	8.96
NFI-ODCE (value wtd-net)	3.11	13.95	13.95	12.77	12.60	5.55	6.94
Public Real Estate							
REIT U.S. Database	7.50	4.48	4.48	12.03	12.89	8.32	12.13
FTSE NAREIT Equity	7.26	3.20	3.20	11.23	11.96	7.41	11.16
Global Real Estate							
Global REIT Database	4.38	1.03	1.03	7.61	8.95	6.15	--
EPRA/NAREIT Developed REITs	4.40	0.05	0.05	6.59	7.97	5.39	9.20
EPRA/NAREIT Developed REITs ex-US	1.10	-3.23	-3.23	1.96	4.46	3.82	8.43

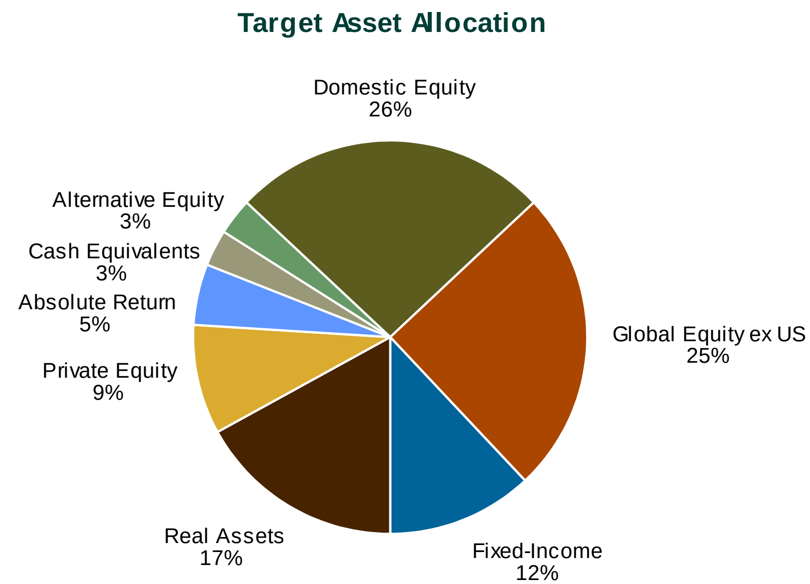
Sources: Callan, Citigroup, JPMorgan Chase & Co.

- The NCREIF Property index's 2.91% return in the fourth calendar quarter of 2015 was split between a 1.20% income return and a 1.72% appreciation return.
- A preliminary query of NCREIF tracked 210 institutional asset trades representing $11.3 billion in volume.
  – The 10-year quarterly transaction average is $5.1 billion.
- Domestic REITs raised about $10.2 billion during the fourth quarter of 2015.

Asset Allocation – Public Employees' Retirement System

Quarter Ending December 31, 2015





Asset Class	$000s Actual	Weight Actual	Target	Percent Difference	$000s Difference
Domestic Equity	2,166,626	26.3%	26.0%	0.3%	24,926
Global Equity ex US	1,944,693	23.6%	25.0%	(1.4%)	(114,633)
Fixed-Income	994,903	12.1%	12.0%	0.1%	6,427
Real Assets	1,488,595	18.1%	17.0%	1.1%	88,253
Private Equity	650,643	7.9%	9.0%	(1.1%)	(90,714)
Absolute Return	502,452	6.1%	5.0%	1.1%	90,587
Cash Equivalents	153,270	1.9%	3.0%	(1.1%)	(93,849)
Alternative Equity	336,123	4.1%	3.0%	1.1%	89,004
Total	8,237,306	100.0%	100.0%		

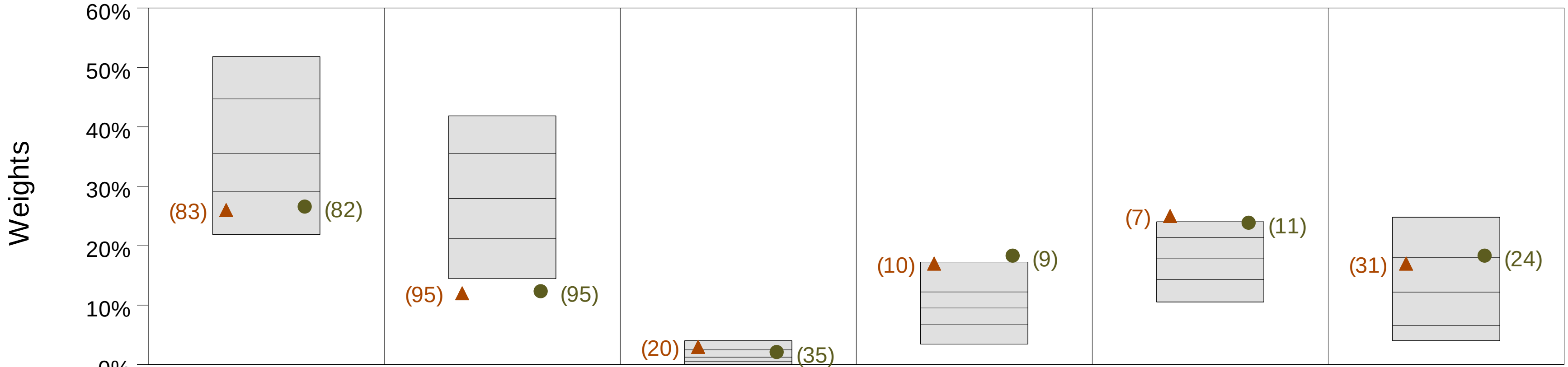
PERS is used as illustrative throughout the presentation.

The other plans exhibit similar modest and understandable variations from strategic target allocations.

Asset Allocation vs. Public Funds (PERS)

Callan Public Fund Database

Asset Class Weights vs Public Fund Sponsor Database



	Domestic Equity	Fixed-Income	Cash Equivalents	Real Assets	Global Equity ex US	Alternative
10th Percentile	51.82	41.87	4.02	17.26	24.04	24.78
25th Percentile	44.70	35.49	2.50	12.22	21.38	18.00
Median	35.55	27.96	1.25	9.53	17.81	12.20
75th Percentile	29.15	21.19	0.50	6.70	14.30	6.56
90th Percentile	21.87	14.44	0.08	3.44	10.53	4.01
Fund ●	26.30	12.08	1.86	18.07	23.61	18.08
Target ▲	26.00	12.00	3.00	17.00	25.00	17.00
% Group Invested	98.98%	97.45%	70.92%	61.22%	97.45%	51.53%

- Total domestic equity is above target after the fourth quarter market rebound while international equity lags the target. Fixed is marginally above target. Real assets are high when compared to other public funds. Policy is “growth” oriented as opposed to “income” oriented.

*Note that “Alternative” includes private equity and absolute return

PERS Performance – As of December 31, 2015

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	27%	26%	0.73%	0.48%	0.08%	(0.03%)	0.05%
Fixed-Income	13%	12%	(0.70%)	0.13%	(0.11%)	(0.04%)	(0.15%)
Real Assets	17%	17%	1.65%	6.78%	(0.89%)	0.02%	(0.86%)
Global Equity ex US	24%	25%	(3.36%)	(5.25%)	0.48%	(0.00%)	0.48%
Private Equity	8%	9%	9.54%	(1.26%)	0.79%	0.03%	0.82%
Absolute Return	6%	5%	1.59%	5.05%	(0.22%)	0.03%	(0.18%)
Alternative Equity	4%	3%	0.22%	0.48%	(0.01%)	0.01%	(0.01%)
Cash Equivalents	1%	3%	0.35%	0.05%	0.00%	0.01%	0.01%
Total			**0.40% =**	**0.24% +**	**0.13% +**	**0.02%**	**0.16%**

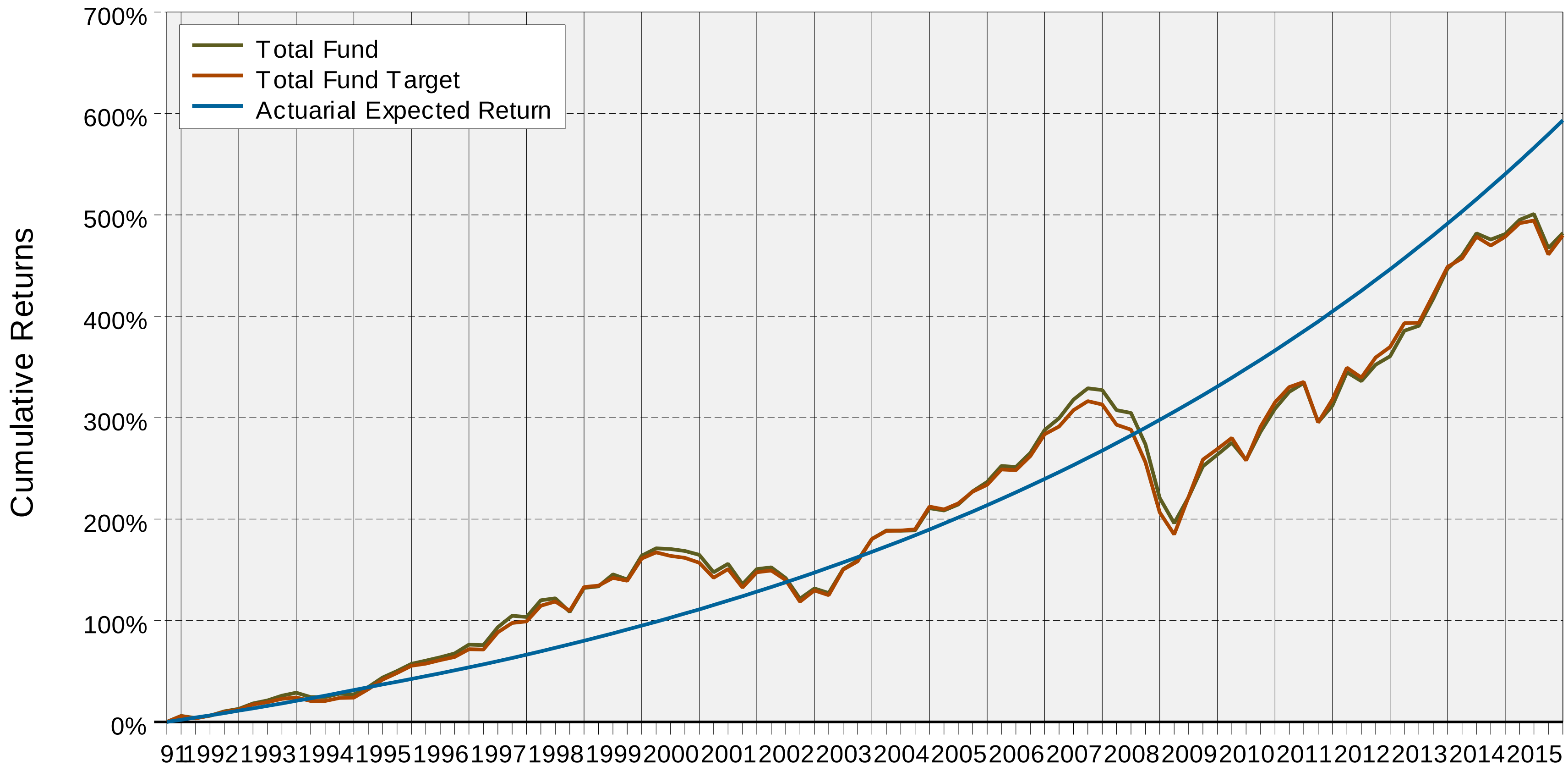
Five Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	29%	27%	11.90%	12.18%	(0.07%)	0.08%	0.01%
Fixed-Income	14%	14%	2.22%	2.20%	(0.00%)	(0.11%)	(0.11%)
Real Assets	17%	17%	9.40%	9.65%	(0.07%)	(0.04%)	(0.10%)
Global Equity ex US	23%	24%	2.33%	1.51%	0.20%	(0.08%)	0.12%
Private Equity	9%	8%	15.01%	8.53%	0.47%	0.03%	0.50%
Absolute Return	4%	5%	4.34%	5.07%	(0.06%)	0.03%	(0.03%)
Alternative Equity	2%	1%	-	-	(0.01%)	0.01%	(0.01%)
Cash	2%	3%	0.33%	0.07%	0.01%	0.06%	0.07%
Total			**7.37% =**	**6.91% +**	**0.47% +**	**(0.02%)**	**0.46%**

- "Manager Effect" was positive during a difficult period in 2015; much stronger over five-years.
- "Asset Allocation" effect is very small, reflecting disciplined and effective rebalancing by staff.

PERS Long-Term Performance as of 12/31/15

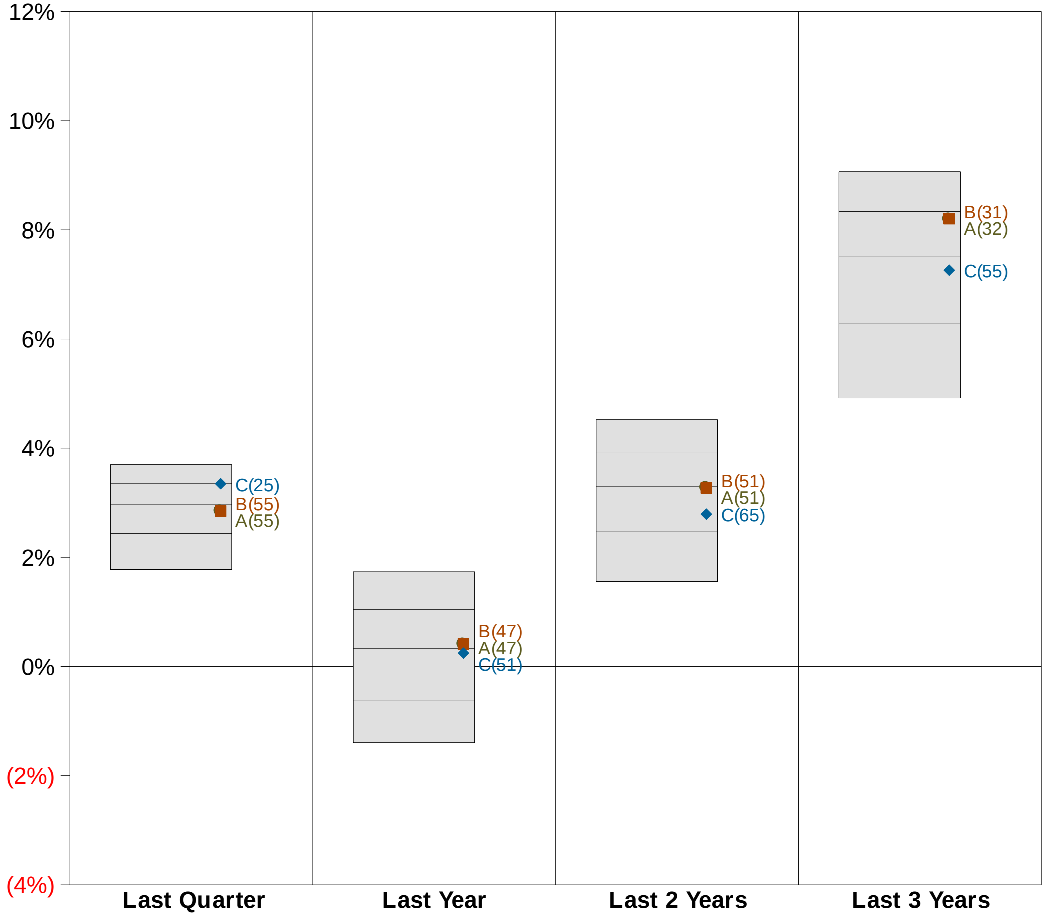
Cumulative Returns Actual vs Target



- Funds have two targets: asset allocation policy return and actuarial return assumption.
- Total Fund returns continue to closely track the strategic allocation target.
- After the crisis of 2008/2009, Total Fund performance has been closing the gap versus the actuarial return. A retreat occurred in 3Q2015, but the Fund matched its target return.

Cumulative Total Fund Returns as of 12/31/15

Callan Public Fund Database

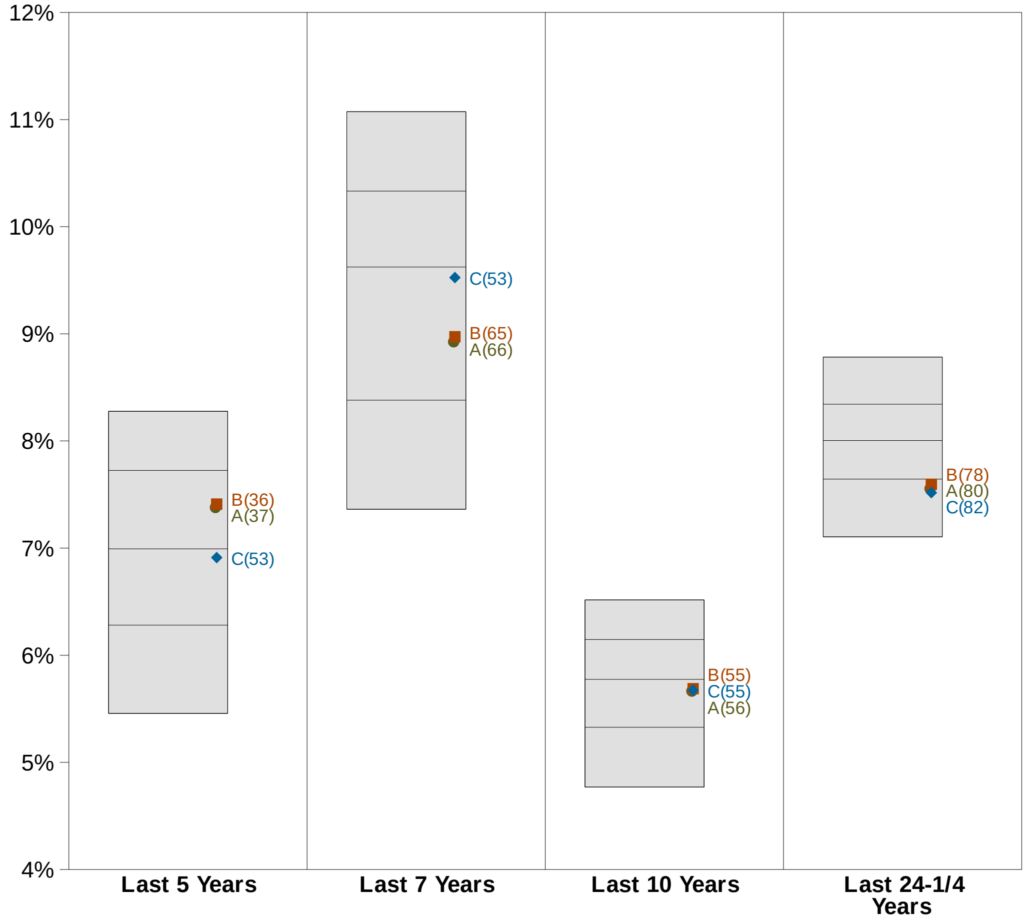


	Last Quarter	Last Year	Last 2 Years	Last 3 Years
10th Percentile	3.70	1.73	4.52	9.07
25th Percentile	3.35	1.04	3.91	8.34
Median	2.96	0.33	3.30	7.50
75th Percentile	2.44	(0.61)	2.47	6.29
90th Percentile	1.78	(1.40)	1.56	4.92
PERS Total Plan ● A	2.84	0.40	3.27	8.19
TRS Total Plan ■ B	2.85	0.41	3.27	8.21
Target Index ◆ C	3.35	0.24	2.79	7.26

- PERS and TRS have outperformed their target for the last one, two, and three years.
- 4th quarter and last year performance trail the target.

Longer-Term Returns as of 12/31/15

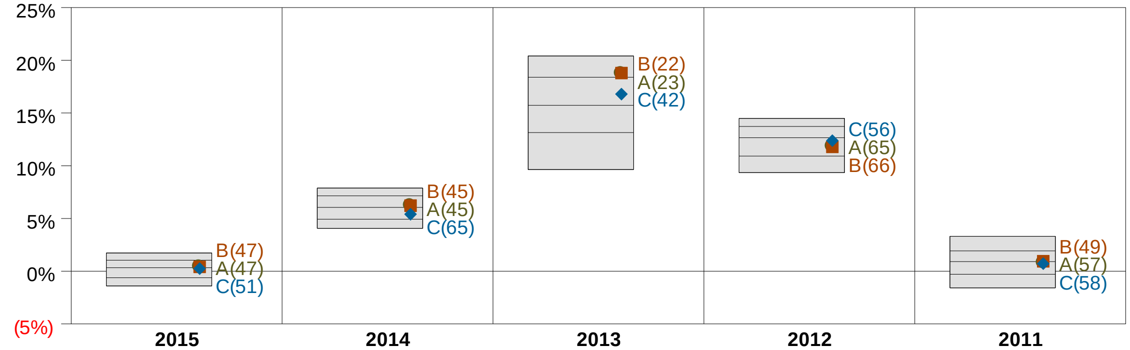
Callan Public Fund Database



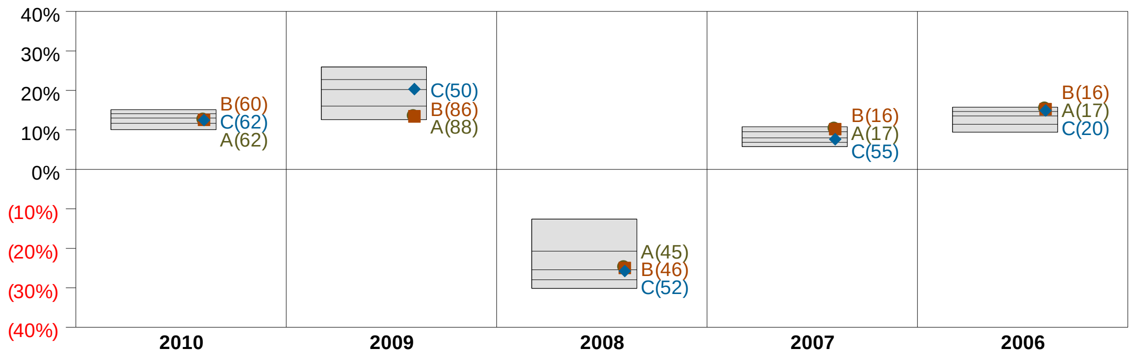
	Last 5 Years	Last 7 Years	Last 10 Years	Last 24-1/4 Years
10th Percentile	8.28	11.07	6.52	8.78
25th Percentile	7.73	10.33	6.15	8.34
Median	6.99	9.62	5.78	8.00
75th Percentile	6.28	8.38	5.33	7.64
90th Percentile	5.46	7.36	4.77	7.10
PERS Total Plan ● A	7.37	8.91	5.65	7.54
TRS Total Plan ■ B	7.41	8.97	5.69	7.60
Target Index ◆ C	6.91	9.53	5.67	7.52

- Five-year performance is above target and median
- Seven-year performance still affected by 2009 timing related issues
- 10-year return near median. TRS beat the target return while PERS trailed by only 0.02%.
- 24 ¼-year return beats target.

Calendar Period Performance vs Public Fund Database



	2015	2014	2013	2012	2011
10th Percentile	1.73	7.89	20.41	14.49	3.31
25th Percentile	1.04	7.14	18.40	13.73	1.92
Median	0.33	6.06	15.73	12.66	0.91
75th Percentile	(0.61)	4.93	13.14	10.92	(0.29)
90th Percentile	(1.40)	4.06	9.64	9.34	(1.58)
PERS Total Plan ● A	0.40	6.22	18.74	11.81	0.77
TRS Total Plan ■ B	0.41	6.22	18.79	11.79	0.95
Target Index ◆ C	0.24	5.40	16.79	12.38	0.72

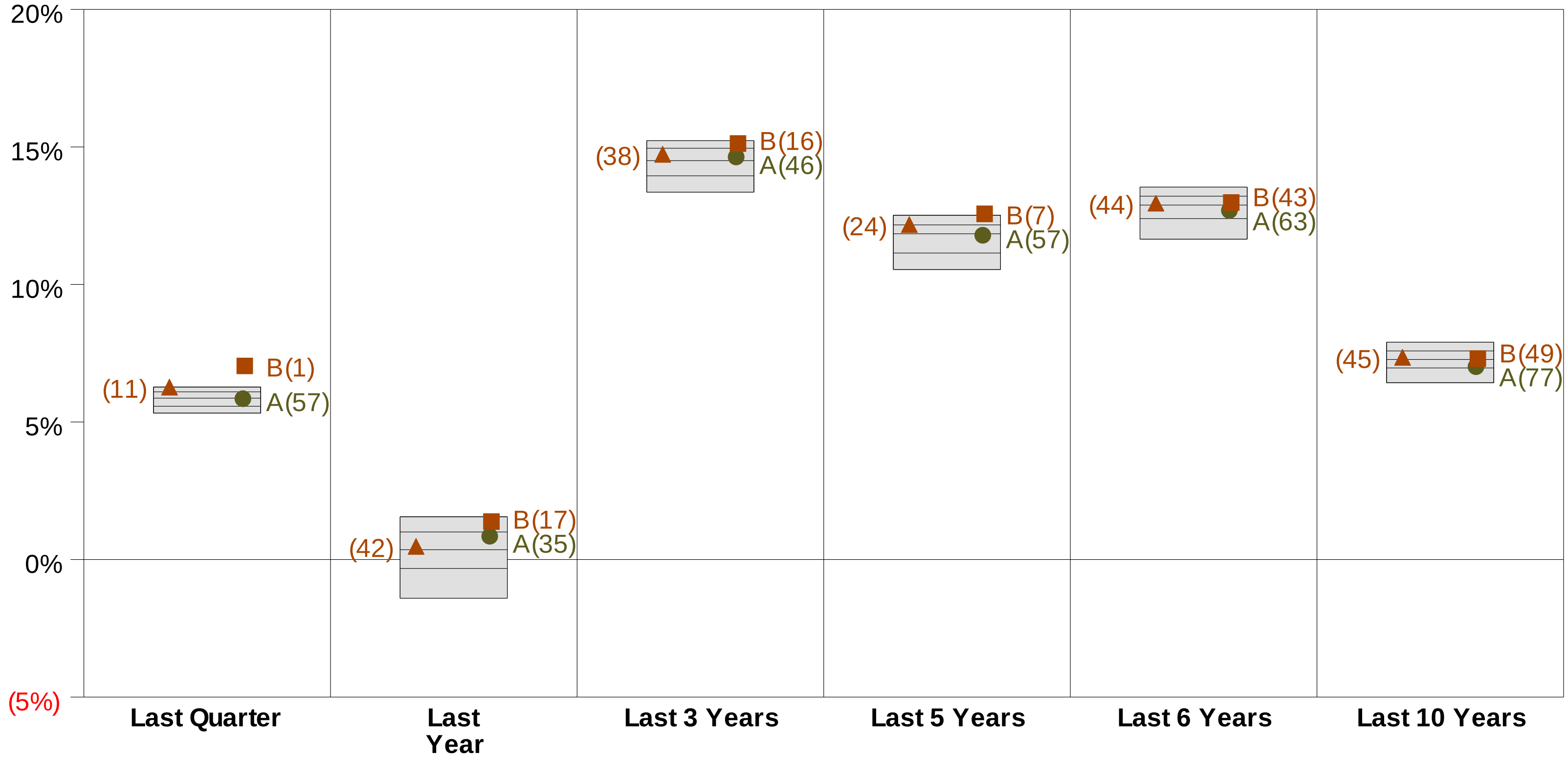


	2010	2009	2008	2007	2006
10th Percentile	15.10	25.93	(12.58)	10.77	15.73
25th Percentile	14.11	22.73	(20.71)	9.53	14.67
Median	13.00	20.23	(25.43)	7.97	13.54
75th Percentile	11.68	16.02	(27.97)	6.84	11.42
90th Percentile	10.06	12.57	(30.14)	5.75	9.41
PERS Total Plan ● A	12.45	13.31	(24.91)	10.17	15.24
TRS Total Plan ■ B	12.55	13.40	(24.98)	10.20	15.26
Target Index ◆ C	12.49	20.33	(25.74)	7.64	14.91

- PERS and TRS had the same return during 2014.
- Peer group range of returns during 2015 and 2014 were very tight.
- Wide range of peer group returns during calendar 2013 due to varying fixed-income allocations within the Public Fund universe.
- PERS and TRS rank above median in six of the ten periods shown.

Total Domestic Equity through 12/31/15

Performance vs Pub Pln- Domestic Equity (Gross)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	6.27	1.56	15.23	12.52	13.54	7.90
25th Percentile	6.10	1.00	14.96	12.17	13.21	7.58
Median	5.87	0.36	14.50	11.85	12.89	7.28
75th Percentile	5.58	(0.32)	13.95	11.15	12.40	6.96
90th Percentile	5.32	(1.40)	13.36	10.54	11.65	6.43
Domestic Equity Pool ● A	5.78	0.79	14.57	11.73	12.63	6.95
Standard & Poor's 500 ■ B	7.04	1.38	15.13	12.57	12.98	7.31
Russell 3000 Index ▲	6.27	0.48	14.74	12.18	12.96	7.35

Domestic Equity Component Returns

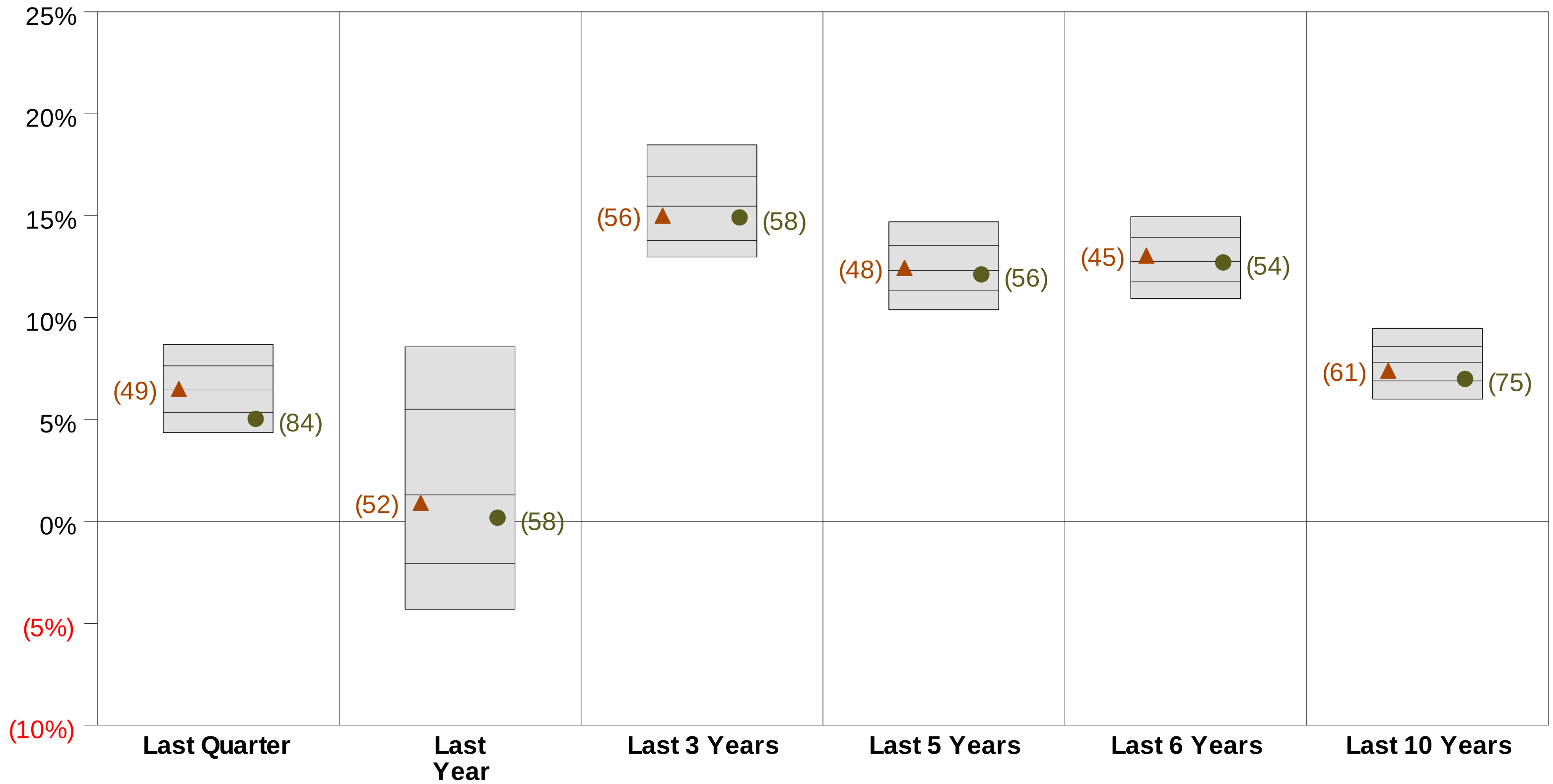
Returns for Periods Ended December 31, 2015

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 6 Years
Total Dom Equity Pool	5.78%	0.79%	14.57%	11.73%	12.63%
Russell 3000 Index	6.27%	0.48%	14.74%	12.18%	12.96%
Large Cap Managers	4.93%	0.08%	14.82%	12.03%	12.62%
Large Cap Active	6.20%	2.12%	15.86%	12.16%	12.88%
Large Cap Passive	4.17%	(1.06%)	14.24%	12.00%	12.48%
Russell 1000 Index	6.50%	0.92%	15.01%	12.44%	13.04%
Small Cap Managers	2.09%	(4.19%)	12.77%	10.08%	12.34%
Small Cap Active	1.96%	(4.03%)	12.98%	10.77%	12.97%
Small Cap Passive	2.84%	(4.38%)	10.80%	8.19%	10.79%
Russell 2000 Index	3.59%	(4.41%)	11.65%	9.19%	11.95%
Alternative Equity	3.39%	0.38%	8.34%	7.43%	8.56%

- Newly adopted policy (effective 7-1-13) alters cosmetics of “true” traditional active & passive returns
  - *Alternative Equity* category includes defensive equity oriented portfolios
  - Now includes the Relational portfolio & in-house equity yield portfolio
- Alternative Equity continues to mute overall volatility within the equity portfolio
- Alternative equity performance contributed positively to the Total Domestic Equity portfolio during quarter

Large Cap Domestic Equity Pool through 12/31/15

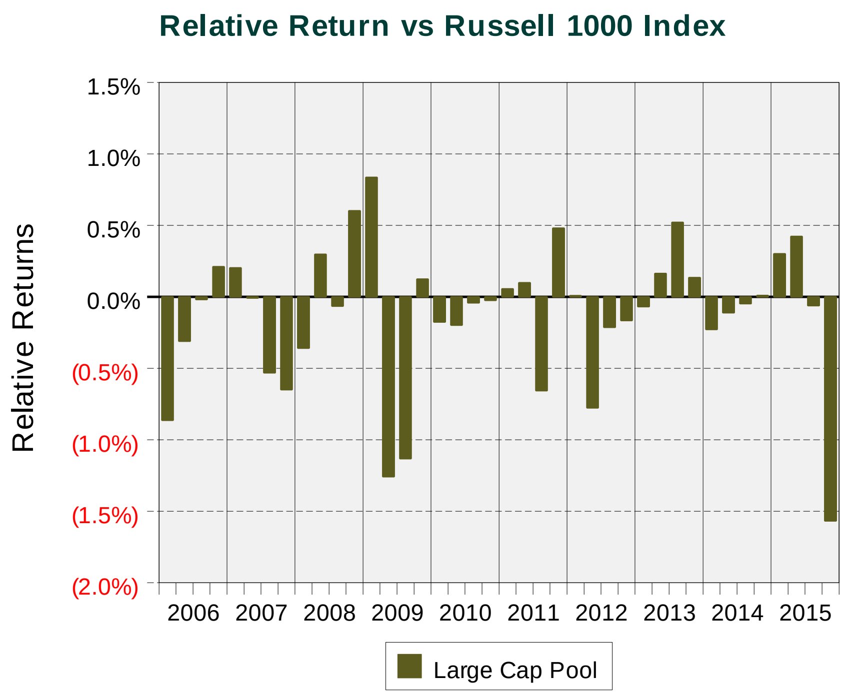
Performance vs CAI Large Capitalization Style (Gross)

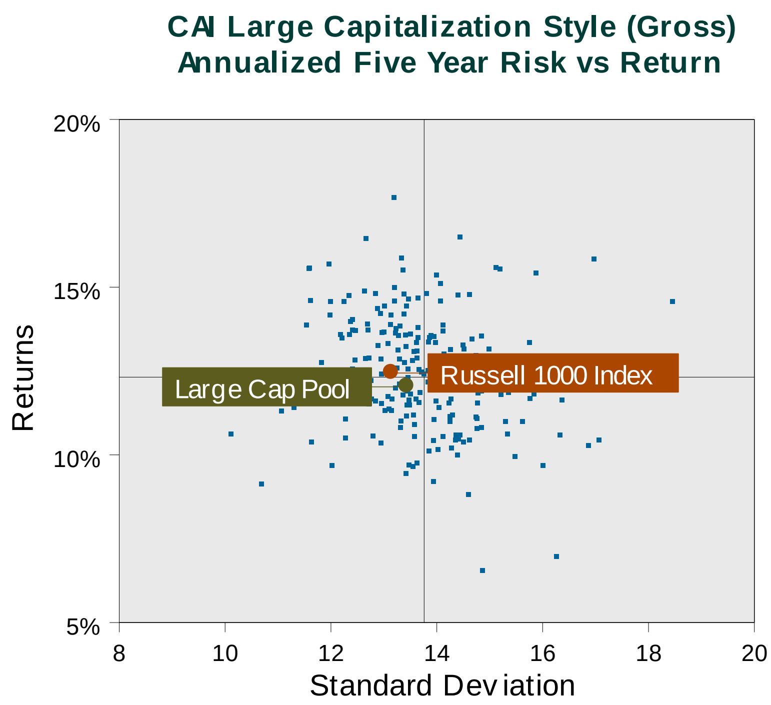


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	8.68	8.57	18.48	14.70	14.95	9.48
25th Percentile	7.63	5.50	16.94	13.55	13.94	8.58
Median	6.45	1.31	15.46	12.32	12.76	7.80
75th Percentile	5.35	(2.05)	13.78	11.35	11.75	6.89
90th Percentile	4.35	(4.30)	12.97	10.39	10.93	6.00
Large Cap Pool ●	4.93	0.08	14.82	12.03	12.62	6.90
Russell 1000 Index ▲	6.50	0.92	15.01	12.44	13.04	7.40

- Relative returns were third quartile over last ten years; some improvement over the last six years.

Large Cap Domestic Equity Pool as of 12/31/15

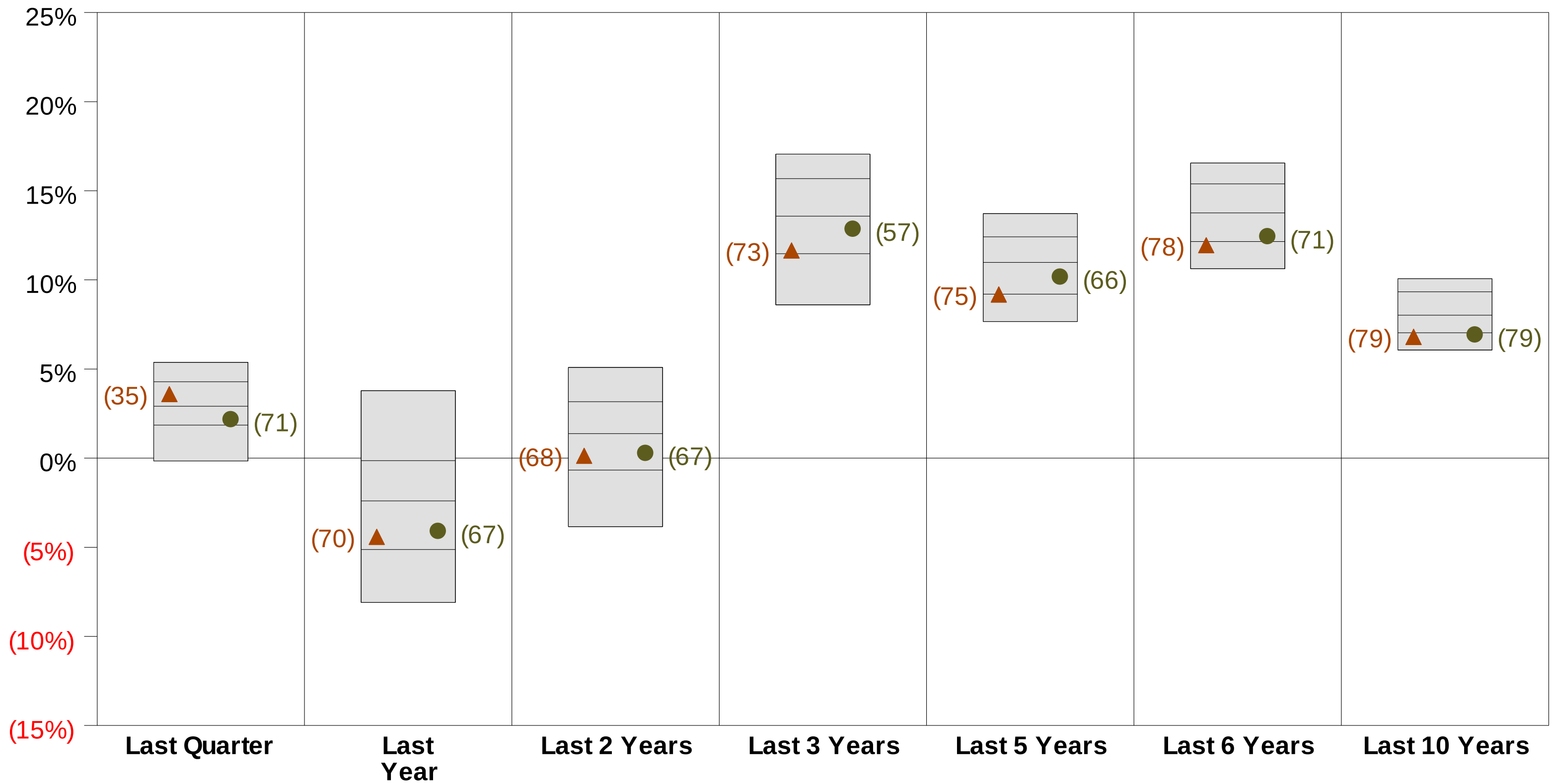




- Nearly two-thirds of ARMB's large cap allocation is passively managed.
- Long-term performance exhibits market-like returns with similar risk.
- Fourth quarter 2015 returns were lower than benchmark due primarily to value-oriented strategies.

Small Cap Domestic Equity Pool through 12/31/15

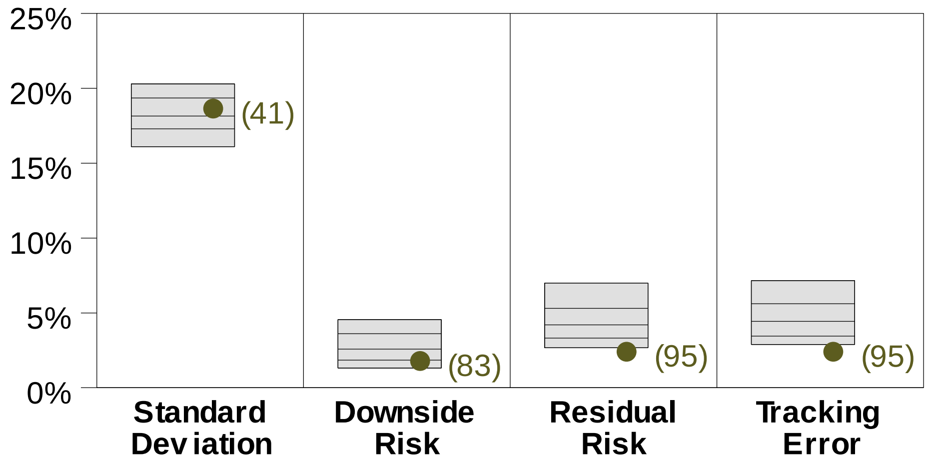
Performance vs CAI Small Capitalization Style (Gross)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	5.38	3.79	5.09	17.06	13.72	16.55	10.06
25th Percentile	4.28	(0.14)	3.17	15.68	12.42	15.38	9.33
Median	2.91	(2.39)	1.37	13.58	10.98	13.75	8.02
75th Percentile	1.86	(5.13)	(0.67)	11.47	9.20	12.15	7.03
90th Percentile	(0.16)	(8.09)	(3.84)	8.60	7.66	10.62	6.07
Small Cap Pool ●	2.09	(4.19)	0.19	12.77	10.08	12.34	6.84
Russell 2000 Index ▲	3.59	(4.41)	0.13	11.65	9.19	11.95	6.80

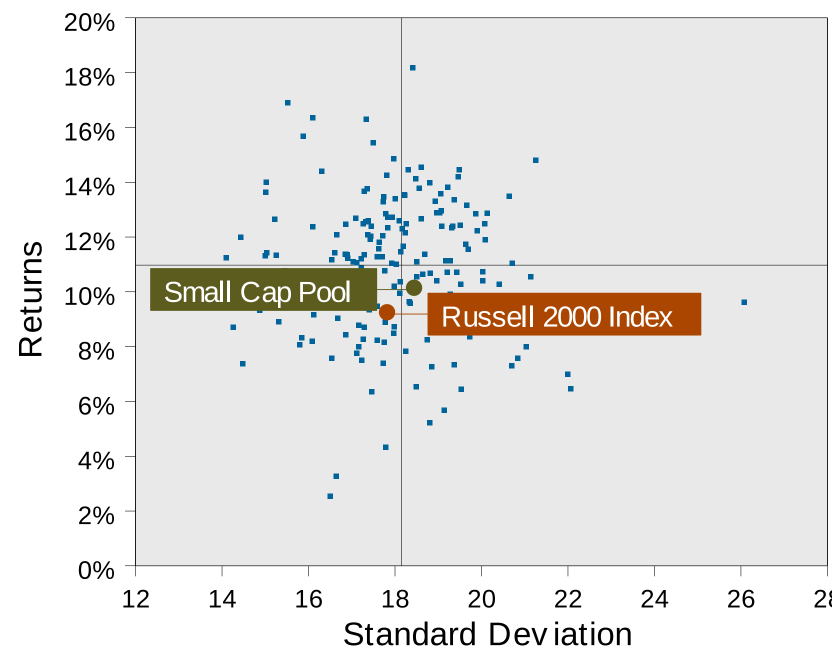
- Except for most recent quarter, returns compare favorably versus the index across all time periods

Small Cap Pool through 12/31/15



	Standard Deviation	Downside Risk	Residual Risk	Tracking Error
10th Percentile	20.30	4.56	6.99	7.15
25th Percentile	19.35	3.60	5.30	5.61
Median	18.15	2.58	4.20	4.44
75th Percentile	17.29	1.84	3.32	3.45
90th Percentile	16.11	1.32	2.66	2.90
Small Cap Equity Pool ●	18.48	1.63	2.25	2.25

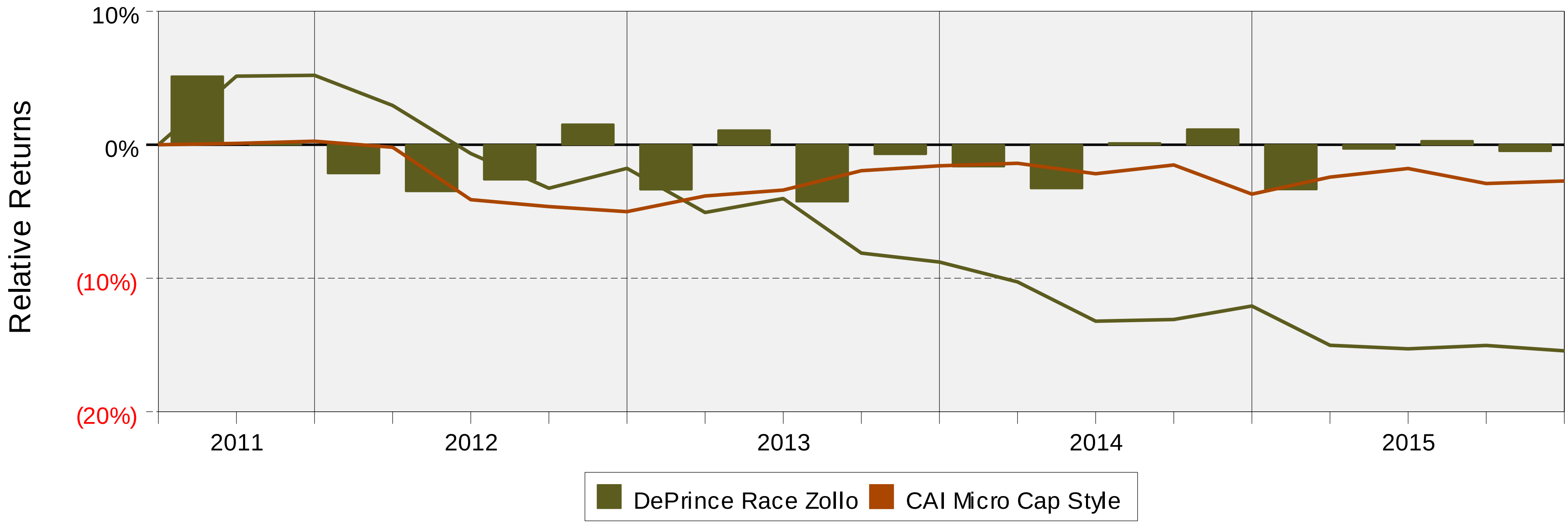
CAI Small Capitalization Style (Gross)
Annualized Five Year Risk vs Return



- Cumulative returns are above benchmark over all trailing time periods except for most recent quarter-end.
- The five-year risk statistics of downside risk, residual risk, and tracking error, compare favorably versus the peer group of small cap managers.

DePrince, Race & Zollo MicroCap Value

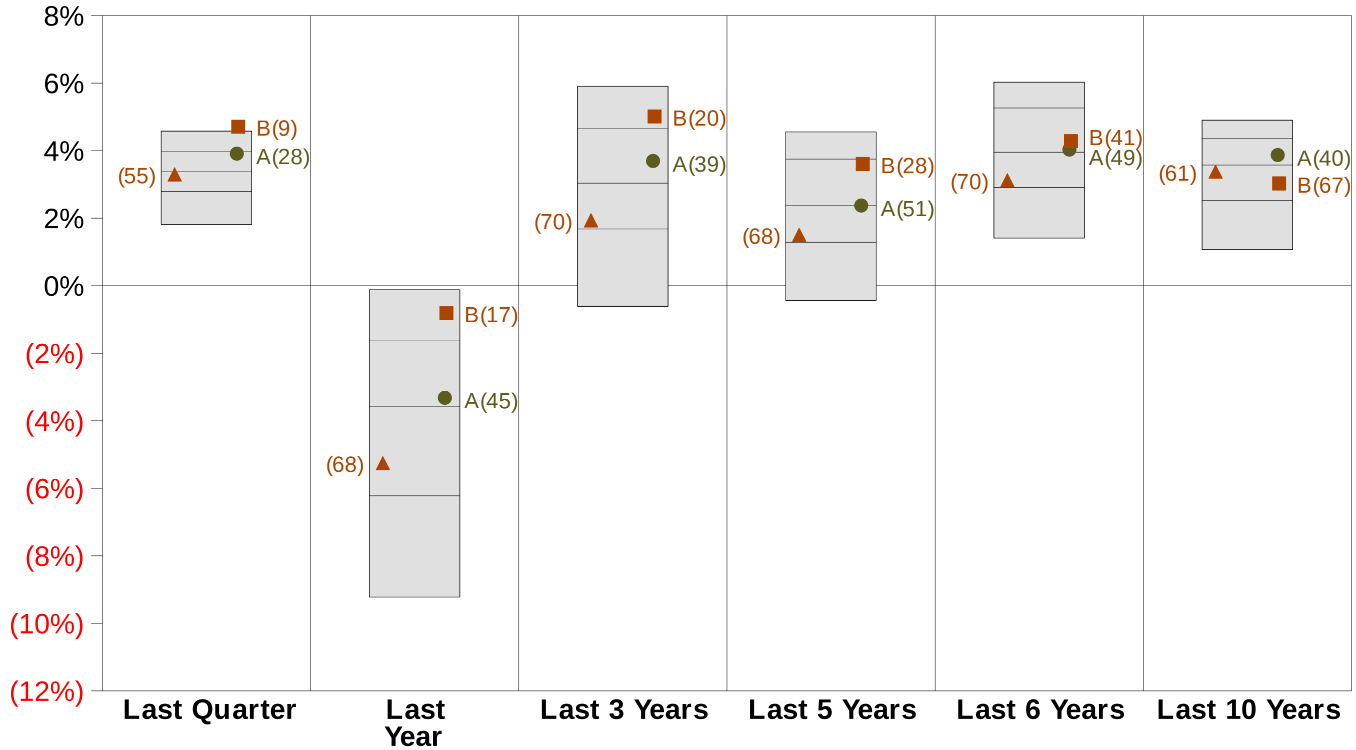
Cumulative and Quarterly Relative Return vs Russell Micro Value Index



- DePrince, Race & Zollo has struggled due to underweight exposure to Healthcare/Biotech due to inflated valuations and below average dividend yields.
- Additionally, selection within Industrials has been a drag on performance.
- Selection within Financials and Energy have both been positive contributors to performance.
- DRZ believes that increasing merger and acquisition activity will result in improved results.

International Equity through 12/31/15

Performance vs Pub Pln- International Equity (Gross)

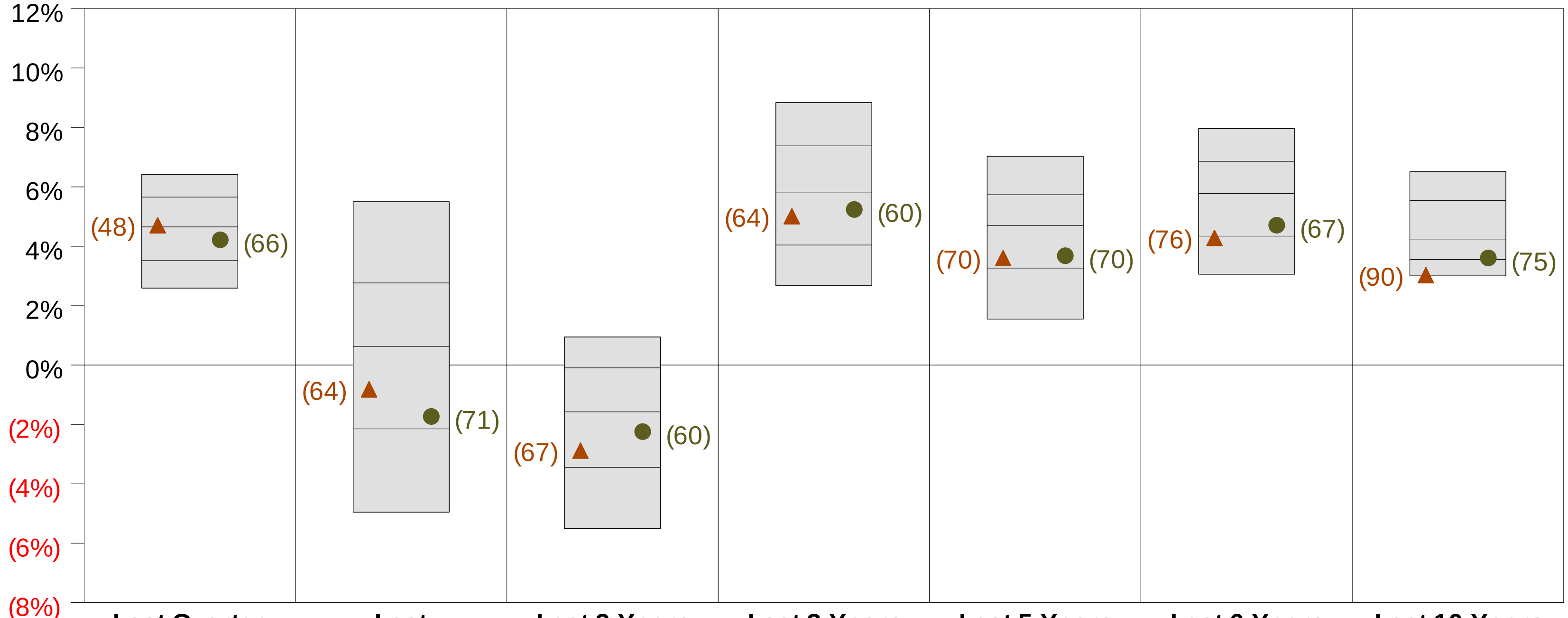


	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	4.58	(0.12)	5.91	4.56	6.03	4.90
25th Percentile	3.97	(1.64)	4.65	3.75	5.27	4.36
Median	3.38	(3.57)	3.04	2.37	3.96	3.58
75th Percentile	2.79	(6.22)	1.68	1.29	2.92	2.52
90th Percentile	1.82	(9.22)	(0.61)	(0.43)	1.41	1.07
Employees' Total Int'l Equity ● A	3.86	(3.36)	3.65	2.33	3.99	3.82
MSCI EAFE Index ■ B	4.71	(0.81)	5.01	3.60	4.28	3.03
MSCI ACWIxUS Gross ▲	3.30	(5.25)	1.94	1.51	3.13	3.38

- Relative returns continue to improve, driven by strong short-term results.

International Equity ex Emerging Markets through 12/31/15

Performance vs CAI Non-U.S. Equity Style (Gross)



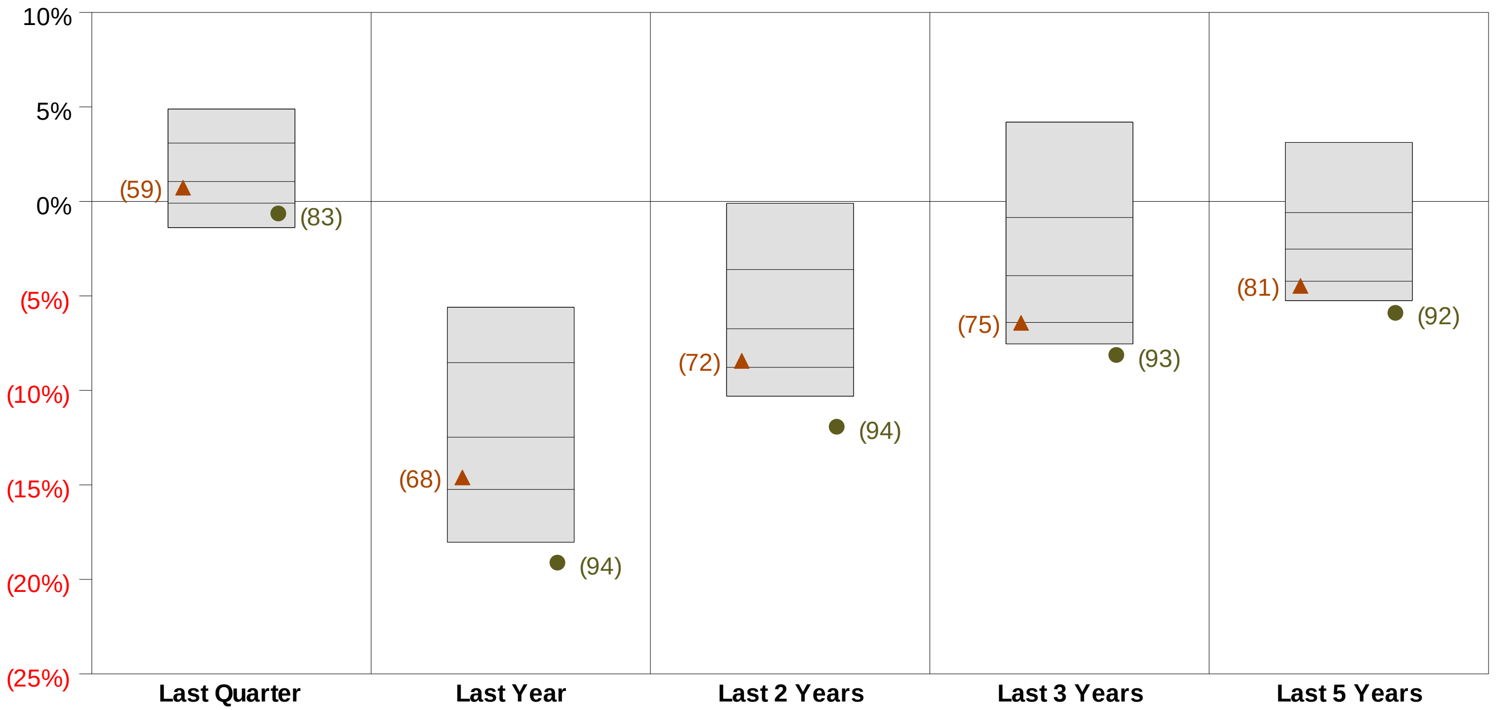
	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	6.42	5.50	0.95	8.84	7.03	7.96	6.51
25th Percentile	5.66	2.76	(0.09)	7.38	5.73	6.86	5.53
Median	4.65	0.62	(1.57)	5.82	4.70	5.78	4.24
75th Percentile	3.52	(2.15)	(3.45)	4.04	3.26	4.34	3.55
90th Percentile	2.59	(4.95)	(5.51)	2.67	1.54	3.06	3.00
Int'l Equity Pool (ex Emerging. Mkt) ●	4.15	(1.79)	(2.31)	5.18	3.62	4.65	3.54
MSCI EAFE ▲	4.71	(0.81)	(2.88)	5.01	3.60	4.28	3.03

International Equity ex Emerging Markets through 12/31/15

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Int'l Equity Pool (ex Emerging Market)	**4.15%**	**(1.79%)**	**5.18%**	**3.62%**	**3.54%**
Allianz Global Investors	2.64%	(11.98%)	-	-	-
Arrowstreet ACWI ex -US	4.06%	(2.88%)	-	-	-
Baillie Gifford ACWI ex US	7.80%	2.58%	-	-	-
Blackrock ACWI ex US IMI	3.52%	(4.39%)	0.86%	-	-
Brandes Investment	4.02%	2.57%	8.69%	5.14%	4.65%
Capital Guardian	4.98%	(3.59%)	4.36%	3.65%	3.38%
Lazard Asset Intl	3.47%	(0.72%)	4.87%	4.79%	4.71%
McKinley Capital	4.26%	1.43%	8.66%	4.59%	3.40%
SSgA Int'l	3.49%	(4.42%)	2.35%	1.61%	-
Schroder Inv Mgmt	7.85%	11.82%	13.56%	7.54%	-
Mondrian Intl Sm Cap	7.26%	3.85%	5.68%	6.42%	-
MSCI EAFE Index	4.71%	(0.81%)	5.01%	3.60%	3.03%
MSCI ACWI ex-US IMI Index	3.52%	(4.60%)	2.02%	1.27%	3.18%

Emerging Markets Pool through 12/31/15

Performance vs CAI Emerging Markets Equity DB (Gross)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years
10th Percentile	4.89	(5.60)	(0.10)	4.20	3.13
25th Percentile	3.09	(8.53)	(3.61)	(0.84)	(0.59)
Median	1.06	(12.48)	(6.74)	(3.92)	(2.52)
75th Percentile	(0.09)	(15.24)	(8.77)	(6.40)	(4.22)
90th Percentile	(1.38)	(18.03)	(10.31)	(7.54)	(5.25)
Emerging Markets Pool ●	(0.72)	(19.20)	(12.02)	(8.22)	(5.98)
MSCI EM Gross ▲	0.73	(14.60)	(8.43)	(6.42)	(4.47)

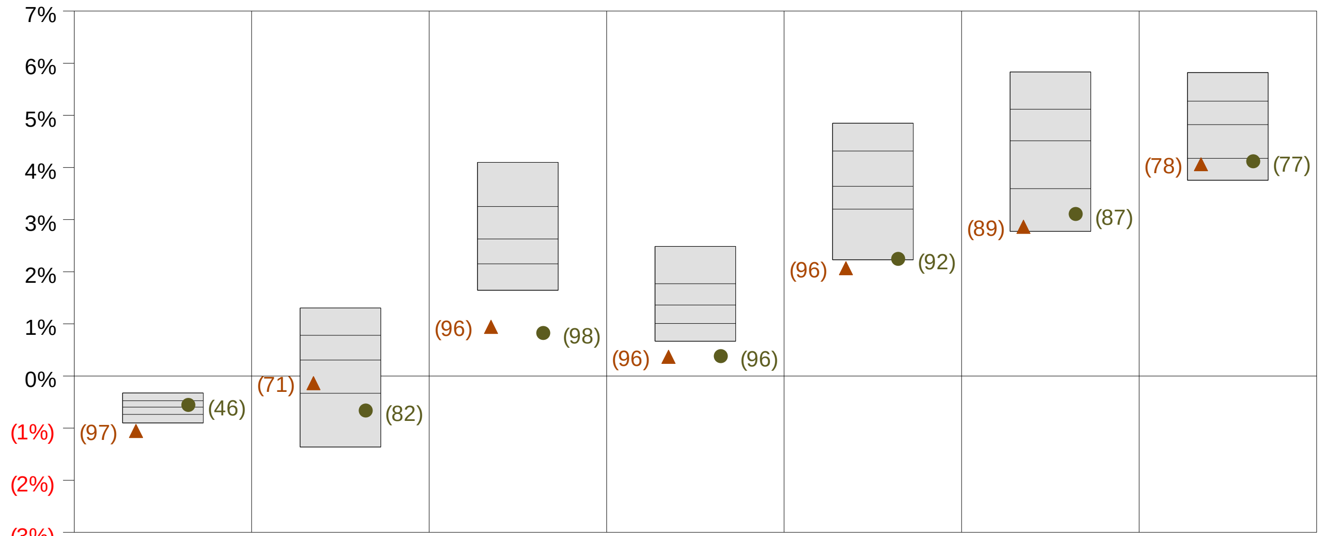
- The Emerging Markets Pool struggled over the last year, and continues to lag longer term.
- Lazard and Eaton Vance both trailed the benchmark

Emerging Markets Pool through 12/31/15

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Emerging Markets Pool	**(0.72%)**	**(19.20%)**	**(8.22%)**	**(5.98%)**	**3.33%**
Lazard Emerging	(0.30%)	(20.16%)	(8.78%)	(5.24%)	-
Eaton Vance Emerging(net)	(1.33%)	(16.34%)	(6.69%)	(4.71%)	-
MSCI Emerging Mkts Idx	0.73%	(14.60%)	(6.42%)	(4.47%)	3.95%

Total Bond as of 12/31/15

Performance vs Pub Pln- Domestic Fixed (Gross)



	Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years	Last 10 Years
10th Percentile	(0.33)	1.30	4.10	2.48	4.85	5.83	5.82
25th Percentile	(0.47)	0.78	3.25	1.77	4.31	5.12	5.27
Median	(0.60)	0.31	2.63	1.36	3.64	4.51	4.82
75th Percentile	(0.74)	(0.33)	2.15	1.01	3.20	3.59	4.17
90th Percentile	(0.90)	(1.36)	1.65	0.67	2.23	2.77	3.75
Total Fixed-Income Pool ●	(0.58)	(0.69)	0.79	0.35	2.22	3.08	4.09
Fixed-Income Target ▲	(1.05)	(0.14)	0.94	0.37	2.07	2.86	4.06

- The Total Bond portfolio has a custom target, intermediate in nature, that reflects a cautious view on the risk of rising rates.
- The strategy's returns outperformed the benchmark last quarter.

Includes In-House and External Portfolios

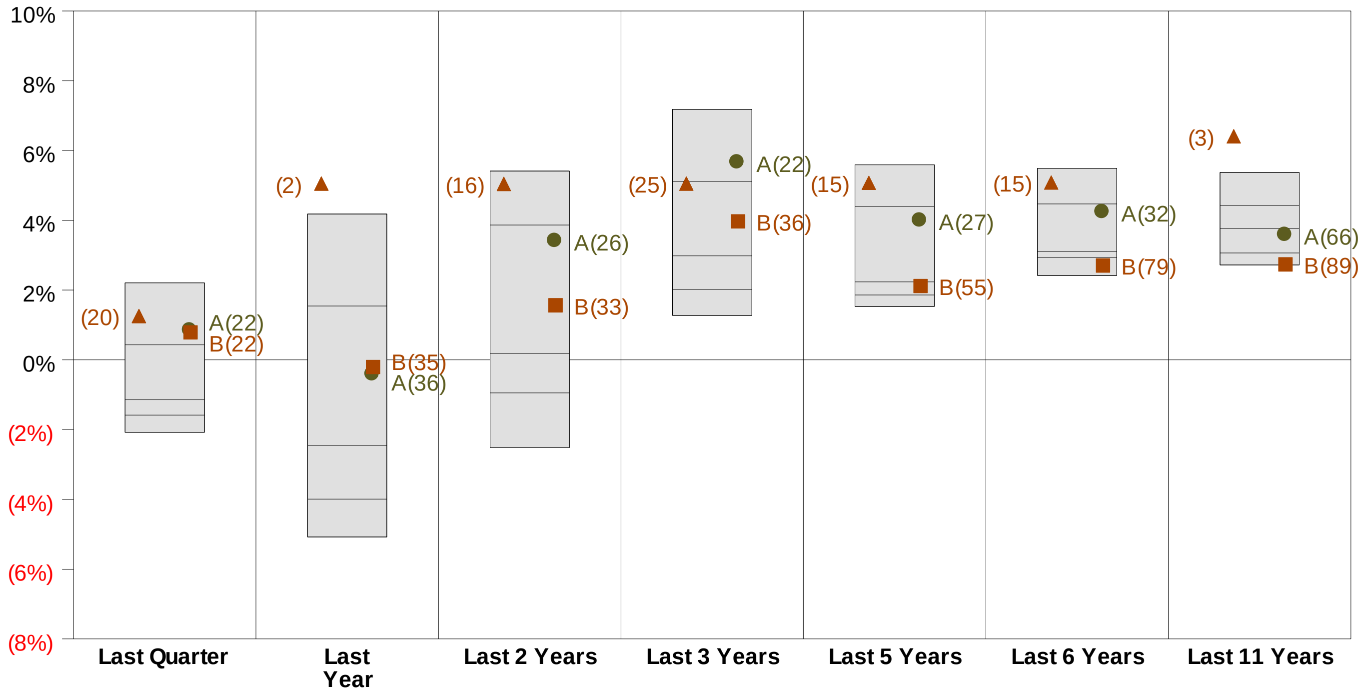
Preliminary Real Assets through 12/31/15

	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
Real Assets	**1.80%**	**(0.07%)**	**1.67%**	**8.01%**	**9.34%**
Real Assets Target (1)	2.14%	3.20%	6.78%	8.34%	9.65%
Real Estate Pool	4.48%	7.21%	12.54%	12.01%	12.15%
Real Estate Target (2)	3.39%	6.37%	12.33%	11.97%	12.25%
Private Real Estate	3.72%	6.81%	15.13%	12.34%	12.23%
NCREIF Total Index	2.91%	6.09%	13.33%	12.04%	12.18%
REIT Internal Portfolio	7.78%	8.95%	2.92%	10.58%	11.87%
NAREIT Equity Index	7.68%	8.74%	2.83%	10.63%	11.91%
Total Farmland	1.01%	2.52%	5.10%	10.00%	10.93%
UBS Farmland	1.07%	2.85%	5.30%	11.69%	12.35%
Hancock Agricultural	0.89%	1.81%	4.69%	6.98%	8.46%
ARMB Farmland Target (3)	1.38%	3.43%	6.17%	9.89%	12.34%
Total Timber	(0.11%)	0.79%	7.30%	8.51%	6.91%
Timberland Investment Resources	0.08%	1.36%	7.75%	7.52%	5.70%
Hancock Timber	(0.62%)	(0.75%)	6.07%	10.14%	8.86%
NCREIF Timberland Index	1.86%	2.64%	4.97%	8.35%	6.84%
TIPS Internal Portfolio	(0.64%)	(1.72%)	(1.27%)	(2.22%)	2.76%
BC US TIPS Index	(0.64%)	(1.78%)	(1.44%)	(2.27%)	2.55%
Total Energy Funds *	(11.01%)	(10.89%)	(26.31%)	(9.62%)	(4.25%)
CPI + 5%	0.45%	1.21%	5.39%	5.72%	6.41%
MLP Composite	(1.52%)	(26.67%)	(29.43%)	2.60%	-
Advisory Research (FKA FAMCO) MLP	(5.79%)	(30.98%)	(32.57%)	(0.52%)	-
Tortoise Capital Adv MLP	2.39%	(22.60%)	(26.53%)	5.54%	-
Alerian MLP Index	(2.76%)	(24.26%)	(32.59%)	(3.40%)	1.47%
Total Infrastructure	1.04%	0.38%	(1.67%)	-	-
Brookfield	(3.38%)	(13.19%)	(16.39%)	-	-
Lazard	3.18%	4.09%	3.90%	-	-
JPM Infrastructure	1.01%	7.49%	(0.16%)	-	-
IFM Infrastructure (funded May 2015)	2.21%	3.39%	-	-	-
Global Infrastructure Idx	(2.20%)	(9.10%)	(11.46%)	4.78%	5.09%

Real estate returns are provided to Callan by ARMB's real estate consultant.

Absolute Return Composite through 12/31/15

Performance vs Absolute Return Hedge FoFs Style (Net)



		Last Quarter	Last Year	Last 2 Years	Last 3 Years	Last 5 Years	Last 6 Years	Last 11 Years
10th Percentile		2.21	4.18	5.41	7.18	5.59	5.49	5.37
25th Percentile		0.43	1.54	3.86	5.12	4.39	4.47	4.42
Median		(1.15)	(2.45)	0.18	2.98	2.23	3.11	3.77
75th Percentile		(1.58)	(3.99)	(0.95)	2.02	1.86	2.93	3.07
90th Percentile		(2.08)	(5.08)	(2.52)	1.27	1.53	2.42	2.72
Absolute Return Composite	● A	0.83	(0.43)	3.39	5.65	3.99	4.22	3.57
HFRI Fund of Funds Compos	■ B	0.79	(0.21)	1.56	3.97	2.12	2.71	2.74
T-Bills + 5%	▲	1.26	5.05	5.04	5.05	5.07	5.08	6.41

- Other than the last year, absolute return allocation's results have exceeded HFRI Fund of Funds Index over each trailing time period shown.

Absolute Return Composite through 12/31/15

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Absolute Return	**1.44%**	**1.59%**	**6.16%**	**4.34%**	**3.46%**
Crestline ABS	0.15%	(2.64%)	8.36%	5.27%	4.08%
Glob Asset Mgt	0.92%	(0.29%)	4.77%	3.83%	-
Prisma ABS	1.19%	0.38%	5.39%	4.28%	-
HFRI Fund of Funds Compos	0.79%	(0.21%)	3.97%	2.12%	2.27%

Individual Account Option Performance: 12/31/15

Balanced & Target Date Funds

Investment Manager	Market Value ($mm)	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Balanced & Target Date Funds											
Alaska Balanced Fund	$1,172	**1.5** 18	**0.3** 6	**5.1** 9	**5.7** 11	**7.6** 38	**4.5** 78		**0.3** 5	**0.2** 100	**1.2** 3
Lipper: Mixed-Asset Target Alloc Cons											
Passive Target		1.6 14	0.3 6	5.0 10	5.6 13	7.4 44	4.3 84				1.3 3
Long Term Balanced Fund	$599	**2.9** 27	**-0.2** 13	**7.7** 19	**7.4** 16	**9.9** 25	**7.9** 62		**0.2** 12	**0.2** 100	**0.9** 14
Lipper: Mixed-Asset Target Alloc Mod											
Passive Target		3.1 22	-0.2 13	7.6 19	7.3 18	9.7 29	7.7 69				0.9 13
Target 2010 Trust	$14	**2.2** 6	**-0.0** 19	**6.3** 6	**6.3** 10		**6.6** 42		**0.1** 11	**0.2** 100	**1.0** 34
CAI Tgt Date 2010											
Custom Index		2.3 5	-0.0 21	6.4 6	6.3 10		6.6 41				0.9 34
Target 2015 Trust	$111	**2.7** 6	**-0.1** 23	**7.5** 4	**7.1** 6	**9.3** 33	**7.9** 21		**0.2** 5	**0.2** 100	**0.9** 32
CAI Tgt Date 2015											
Custom Index		2.8 4	-0.2 27	7.5 4	7.1 6	9.1 43	8.0 20				0.9 35
Target 2020 Trust	$111	**3.2** 11	**-0.2** 29	**8.4** 4	**7.8** 4	**10.5** 19	**9.0** 19		**0.1** 4	**0.2** 100	**0.9** 21
CAI Tgt Date 2020											
Custom Index		3.3 1	-0.4 37	8.4 4	7.8 4	10.4 23	9.1 18				0.8 23
Target 2025 Trust	$92	**3.6** 13	**-0.4** 37	**9.2** 6	**8.4** 8	**11.4** 28	**10.0** 24		**-0.0** 8	**0.3** 100	**0.8** 13
CAI Tgt Date 2025											
Custom Index		3.8 2	-0.5 43	9.3 5	8.4 8	11.4 29	10.1 20				0.8 16
Target 2030 Trust	$78	**4.0** 23	**-0.5** 36	**9.9** 5	**8.8** 6		**10.9** 40		**0.1** 5	**0.3** 100	**0.8** 10
CAI Tgt Date 2030											
Custom Index		4.2 11	-0.7 46	10.0 5	8.8 6		11.0 29				0.8 14
Target 2035 Trust	$81	**4.3** 26	**-0.6** 39	**10.5** 3	**9.1** 3		**11.6** 53		**0.0** 3	**0.3** 100	**0.8** 7
CAI Tgt Date 2035											
Custom Index		4.5 15	-0.8 44	10.5 3	9.1 3		11.7 45				0.8 11
Target 2040 Trust	$90	**4.6** 24	**-0.7** 41	**10.7** 3	**9.3** 3		**11.9** 67		**0.0** 3	**0.3** 100	**0.8** 6
CAI Tgt Date 2040											
Custom Index		4.8 13	-0.9 48	10.8 3	9.3 3		12.0 66				0.8 9
Target 2045 Trust	$109	**4.6** 24	**-0.8** 36	**10.7** 3	**9.3** 3		**11.9** 76		**0.1** 3	**0.3** 100	**0.8** 6
CAI Tgt Date 2045											
Custom Index		4.8 13	-0.9 43	10.8 3	9.3 3		12.0 73				0.8 10

Returns: above median; third quartile; fourth quartile
Risk: below median; second quartile; first quartile
Risk Quadrant:
Excess Return Ratio: above median; third quartile; fourth quartile
Tracking Error: below median; second quartile; first quartile
Sharpe Ratio: above median; third quartile; fourth quartile

Investment Manager	Market Value ($mm)	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Target 2050 Trust	$130	**4.6** 25	**-0.8** 40	**10.7** 4	**9.3** 3		**11.9** 78		**0.1** 3	**0.3** 100	**0.8** 6
CAI Tgt Date 2050											
Custom Index		4.8 13	-0.9 44	10.8 4	9.3 3		12.0 77				0.8 8
Target 2055 Trust	$75	**4.6** 33	**-0.7** 38	**10.8** 6	**9.3** 7		**11.9** 67		**0.1** 7	**0.3** 99	**0.8** 10
CAI Tgt Date 2055											
Custom Index		4.8 19	-0.9 42	10.8 6	9.3 7		12.0 66				0.8 14

Returns: above median; third quartile; fourth quartile
Risk: below median; second quartile; first quartile
Risk Quadrant:
Excess Return Ratio: above median; third quartile; fourth quartile
Tracking Error: below median; second quartile; first quartile
Sharpe Ratio: above median; third quartile; fourth quartile

Other Options: 12/31/15

Active Equity, Stable Value, and Interest Income

Investment Manager	Market Value ($mm)	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Active and Other Funds											
AK International Equity CAI Mut Fd: Non-U.S. Equity Style	$27	**2.5** 92									
MSCI EAFE Index		4.7 37	-0.8 61	5.0 46	3.6 50	7.8 65	14.7 80				0.2 47
Allianz/RCM Soc Resp CAI Mut Fd: Core Equity Style	$40	**6.7** 41	**-0.1** 58	**13.2** 76	**9.7** 79	**13.2** 68	**14.0** 40		**-0.6** 93	**1.2** 96	**0.7** 93
MSCI USA ESG		6.0 63	-1.3 76	13.4 71	11.6 45	14.1 43	12.7 83				0.9 50
T. Rowe Price Small Cap CAI Mut Fd: Sm Cap Broad Style	$123	**4.9** 17	**-2.8** 40	**13.4** 31	**11.6** 13	**18.1** 14	**17.8** 53		**1.4** 1	**1.7** 99	**0.6** 16
Russell 2000 Index		3.6 34	-4.4 59	11.7 58	9.2 50	14.0 70	17.9 49				0.5 47
T. Rowe Price Stable Value Fd CAI Stable Value Database	$357	**0.6** 1	**2.4** 1	**2.5** 1	**2.8** 1	**3.1** 6	**0.2** 62		**7.6** 12	**0.1** 54	**13.8** 11
5 Yr U.S. Treas Rolling		0.3 83	1.3 80	1.5 67	1.9 53	2.4 42	0.3 18				6.1 82
Def Comp Interest Income Fund CAI Stable Value Database	$183	**0.7** 1	**2.8** 1	**2.9** 1	**3.2** 1	**3.6** 1	**0.2** 56		**13.3** 2	**0.0** 93	**15.1** 10
5 Yr U.S. Treas Rolling		0.3 83	1.3 80	1.5 67	1.9 53	2.4 42	0.3 18				6.1 82

Returns:
- above median
- third quartile
- fourth quartile

Risk:
- below median
- second quartile
- first quartile

Risk Quadrant:

Excess Return Ratio:
- above median
- third quartile
- fourth quartile

Tracking Error:
- below median
- second quartile
- first quartile

Sharpe Ratio:
- above median
- third quartile
- fourth quartile

Passive Options: 12/31/15

Investment Manager	Market Value ($mm)	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
Index Funds											
State Street S&P Index Fund (i)	$337	**7.1** 29	**1.4** 50	**15.1** 58	**12.6** 51	**14.8** 53	**12.8** 78		**-0.4** 77	**0.0** 100	**1.0** 46
CAI Large Cap Core Style											
S&P 500 Index		7.0 29	1.4 50	15.1 58	12.6 51	14.8 53	12.8 78				1.0 46
BlackRock S&P 500 Index Fund (i)	$180	**7.0** 36	**1.3** 51	**15.1** 37	**12.6** 38	**14.9** 45	**12.8** 83		**0.4** 20	**0.0** 99	**1.0** 34
CAI Mut Fd: Core Equity Style (Gross)											
S&P 500 Index		7.0 36	1.4 51	15.1 37	12.6 38	14.8 45	12.8 83				1.0 34
SSgA Russell 3000 Index (i)	$71	**6.3** 55	**0.6** 54	**14.8** 42	**12.2** 37	**15.1** 32	**13.4** 71		**0.5** 9	**0.1** 100	**0.9** 32
CAI Mut Fd: Large Cap Broad Style (Net)											
Russell 3000 Index		6.3 56	0.5 54	14.7 43	12.2 38	15.0 33	13.5 70				0.9 33
SSgA World Equity ex-U.S. Index (i)	$30	**2.7** 87	**-5.6** 91	**1.1** 97	**1.0** 94	**7.6** 64	**15.2** 59		**-0.1** 95	**0.8** 100	**0.1** 94
CAI MF: Non-U.S. Equity Style (Net)											
MSCI ACWI x U.S. Index (Net)		3.2 66	-5.7 91	1.5 96	1.1 94	7.5 65	15.0 65				0.1 93
SSgA Global Balanced Index (i)	$54	**2.6** 26	**-1.3** 43	**4.8** 47	**5.0** 50		**7.8** 48		**0.7** 17	**0.2** 100	**0.6** 58
CAI Int'l/Global Balanced Database											
Global Balanced Custom Benchmark		2.7 24	-1.6 50	4.7 48	4.8 55		7.8 49				0.6 64
SSgA Long U.S. Treasury Index (i)	$15	**-1.4** 55	**-1.1** 3	**2.6** 28	**7.7** 35	**4.8** 60	**14.5** 30		**-0.1** 46	**0.1** 99	**0.5** 49
CAI Mut Fd: Extended Mat Fixed Income											
Barclays Long Treasury Index		-1.4 54	-1.2 4	2.6 28	7.7 34	4.7 62	14.5 30				0.5 49
SSgA U.S. TIPS Index (i)	$18	**-0.7** 46	**-1.5** 31	**-2.4** 28	**2.4** 7	**4.2** 17	**5.3** 40		**-4.2** 95	**0.0** 100	**0.4** 6
Lipper: TIPS Funds											
Barclays U.S. TIPS Index		-0.6 42	-1.4 27	-2.3 22	2.5 3	4.3 12	5.3 38				0.5 4
SSgA World Gov't Bond Ex-U.S. Index (i)	$8	**-1.4** 85	**-5.6** 81	**-4.3** 92	**-1.3** 96	**0.3** 100	**5.8** 3		**-0.3** 99	**0.1** 100	**-0.2** 96
CAI Mut Fd: Global Fixed Income Style											
Citi WGBI Non-U.S. Index		-1.4 85	-5.5 81	-4.3 92	-1.3 96	0.4 100	5.8 3				-0.2 95
U.S. Real Estate Invesment Trust (i)	$41	**7.4** 31	**4.2** 21	**11.5** 18	**12.0** 18	**16.5** 25	**15.0** 47		**-2.1** 99	**0.1** 99	**0.8** 26
CAI Mut Fd: Real Estate Database											
U.S. Select REIT Index		7.5 26	4.5 13	11.8 12	12.3 13	16.7 22	15.1 39				0.8 18

Returns:	Risk:	Risk Quadrant:	Excess Return Ratio:	Tracking Error:	Sharpe Ratio:
above median	below median		above median	below median	above median
third quartile	second quartile		third quartile	second quartile	third quartile
fourth quartile	first quartile		fourth quartile	first quartile	fourth quartile

Investment Manager	Market Value ($mm)	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	5 Year Risk	5 Year Risk Quadrant	5 Year Excess Rtn Ratio	3 Year Tracking Error	5 Year Sharpe Ratio
BlackRock Govt/Credit Bond Fund (i)	$47	**-0.8** 78	**0.0** 61	**1.1** 71	**3.3** 75	**3.8** 94	**3.3** 5		**-2.2** 98	**0.1** 100	**1.0** 85
CAI Mut Fd: Core Bond Style											
Barclays Govt/Credit Bd		-0.7 75	0.1 45	1.2 66	3.4 58	4.0 93	3.3 5				1.0 84
BlackRock Int. Govt Bond Fund (i)	$17	**-0.8** 78	**1.1** 21	**0.7** 66	**1.9** 73	**1.9** 90	**2.1** 51		**-4.3** 100	**0.0** 98	**0.9** 85
CAI MF: Intermediate Fixed Income Style											
Barclays Gov Inter		-0.8 74	1.2 17	0.8 60	2.0 67	2.1 88	2.1 52				0.9 77
State Street Inst Trsry MM (i)	$38	**0.0** 100	**0.0** 100	**0.0** 98	**0.0** 62	**0.0** 50	**0.0** 16		**-3.5** 93	**0.0** 21	**-16.3** 18
Lipper: US Treas Money Mk											
3-Month T-Bills		0.0 4	0.0 1	0.0 1	0.1 1	0.1 1	0.0 1				-1.4 1

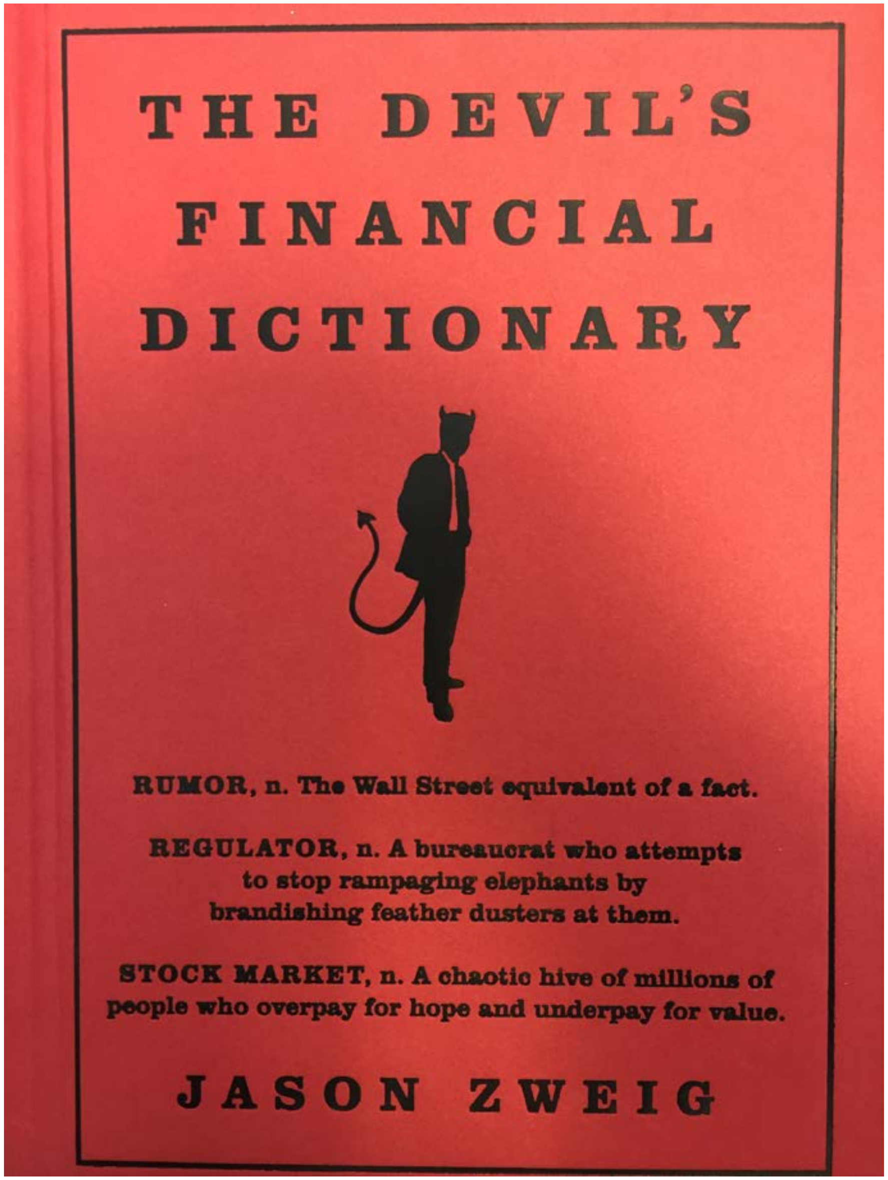
Returns:	Risk:	Risk Quadrant:	Excess Return Ratio:	Tracking Error:	Sharpe Ratio:
above median	below median		above median	below median	above median
third quartile	second quartile		third quartile	second quartile	third quartile
fourth quartile	first quartile		fourth quartile	first quartile	fourth quartile

(i) – Indexed scoring method used. Green: manager & index differ by less than +/- 10 percentiles; Yellow: manager and index differ by +/- 20 percentiles; Red: manager & index differ by more than 20 percentiles.

Potential addition to the investments bookshelf

A useful, tongue-in-cheek reference guide

- Jason Zweig is currently a Wall Street Journal columnist and author.
- Has written for various prestigious magazines including Time, Money and Forbes.
- Reviews:
  - “An indispensable survival guide to the hostile wilderness of today’s financial markets, . . . cuts through the fads and fakery of Wall Street . . .”
  - “. . distills the complexities, absurdities, and pomposities of Wall Street into plain truths and aphorisms anyone can understand.”
- Zweig, J. (2015). *The Devil’s Financial Dictionary*. New York, NY: PublicAffairs.
- Sample of contents available on-line at: http://www.jasonzweig.com/dictionary/



ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Asset Allocations – Resolutions 2016-04 and 2016-05	ACTION:	X
DATE:	April 21-22, 2016	INFORMATION:	

<u>BACKGROUND</u>:

The Alaska Retirement Management Board (Board) sets and reviews the asset allocations on behalf of all plans over which it has fiduciary responsibility. This process incorporates ten-year capital market assumptions, board goals, actuarial assumptions, and other factors.

<u>STATUS</u>:

At the February 2016 meeting of the Board, Callan Associates, Inc. (Callan) presented the 2016 capital market projections that are the basis for the asset allocation and optimization process. On March 18, 2016, Chief Investment Officer Gary Bader and Deputy CIO Bob Mitchell conferred by phone with Paul Erlendson and Jay Kloepfer of Callan and Investment Advisory Council (IAC) members Dr. William Jennings, Dr. Jerrold Mitchell and Robert Shaw regarding asset allocation for the next fiscal year.

Staff, the IAC, and Callan recommend the following strategic asset allocations after considering current asset allocations and a range of optimal portfolios produced by Callan:

- Resolution 2016-04 –
    - Public Employees' Retirement System Defined Benefit and Defined Contribution Plans
    - Teachers' Retirement System Defined Benefit and Defined Contribution Plans
    - Judicial Retirement System Defined Benefit Plans
- Resolution 2016-05 – Alaska National Guard and Naval Militia Retirement Systems

<u>RECOMMENDATION</u>:

The Alaska Retirement Management Board adopt Resolutions 2016-04 and 2016-05, approving the asset allocations for fiscal year 2017.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Asset Allocation For the Funds of the
Public Employees' Retirement System Defined Benefit and Defined Contribution Plans,
Teachers' Retirement System Defined Benefit and Defined Contribution Plans, and
Judicial Retirement System Defined Benefit Plans

Resolution 2016-04

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee of the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policies for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts with an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has reviewed the actuarial assumptions; and

WHEREAS, the Board has reviewed the asset allocation set forth in the study prepared by the external investment consulting firm of Callan Associates, Inc.; and

WHEREAS, a prudent, diversified portfolio reduces risk and volatility and considers short term and long term earnings requirements for the Funds; and

WHEREAS, the Board shall continue to review, evaluate and make appropriate adjustments to asset allocation for the retirement plans on a periodic basis;

NOW THEREFORE, BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD that effective July 1, 2016, the following asset allocation be established for the following funds:

(1) Public Employees' Retirement System
- Defined Benefit Plans
    - Retirement Trust
    - Retirement Health Care Trust
- Defined Contribution Plans
    - Health Reimbursement Arrangement Plan Trust Fund
    - Retiree Medical Plan
    - Defined Benefit Occupational Death and Disability

        - Public Employees All Other
        - Peace Officers and Firefighters

(2) Teachers' Retirement System
- Defined Benefit Plans
    - Retirement Trust
    - Retirement Health Care Trust
- Defined Contribution Plans
    - Health Reimbursement Arrangement Plan Trust Fund
    - Retiree Medical Plan
    - Defined Benefit Occupational Death and Disability

(3) Judicial Retirement System
- Retirement Trust
- Retirement Health Care Trust

Target Asset Allocation

Asset class	Allocation	Range
Global Equity	53%	± 10%
Global Fixed Income	13%	± 4%
Real Assets	17%	± 8%
Alternatives	16%	± 8%
Cash Equivalents	1%	+3%/-1%
Total	100%	

Projected Arithmetic Return	8.0%
Expected Return – 10-Year Geometric Mean	7.1%
Projected Standard Deviation	15.0%

This resolution repeals and replaces Resolution 2015-03.

DATED at Anchorage, Alaska this ____ day of April, 2016.

____
Chair

ATTEST:

____
Secretary

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Asset Allocation
For the Alaska National Guard and Naval Militia Retirement Systems

Resolution 2016-05

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee of the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts with an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has reviewed the actuarial assumptions for the Alaska National Guard and Naval Militia Retirement Systems; and

WHEREAS, the Board has reviewed the asset allocation set forth in the study prepared by the external investment consulting firm of Callan Associates, Inc.; and

WHEREAS, a prudent, diversified portfolio reduces risk and volatility and considers short term and long term earnings requirements for the Funds; and

WHEREAS, the Board shall continue to review, evaluate and make appropriate adjustments to asset allocation for the retirement plans on a periodic basis;

NOW THEREFORE, BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD that the following asset allocation be established for the Alaska National Guard & Naval Militia Retirement System, effective July 1, 2016:

Target Asset Allocation

Asset class	Allocation	Range
Global Equity	48%	± 9%
Global Fixed Income	52%	± 9%
Cash Equivalents	0%	+ 3%
Total	100%	

Projected Arithmetic Return	5.9%	
Expected Return – 10-Year Geometric Mean	5.6%	
Projected Standard Deviation	9.5%	

This resolution repeals and replaces Resolution 2015-04.

DATED at Anchorage, Alaska this ____ day of April, 2016.

____

Chair

ATTEST:

____

Secretary

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Investment Advisory Council Member Contract Expiration	ACTION:	X
		INFORMATION:	
DATE:	April 22, 2016		

BACKGROUND:

AS 37.10.270 provides that the Alaska Retirement Management Board (Board) may appoint an investment advisory council (IAC) composed of at least three and not more than five members. Members shall possess experience and expertise in financial investments and management of investment portfolios for public, corporate, or union pension benefit funds, foundations or endowments. The three advisory positions are designated by areas of expertise: an academic advisor, an advisor with experience as trustee/manager of a public fund or endowment, and an advisor with experience as a portfolio manager. IAC members currently attend ARMB meetings, an annual manager review meeting, and the annual education conference.

STATUS:

The term of Robert Shaw expires June 30, 2016. Mr. Shaw holds the seat designated for the advisor with experience and expertise in financial investments and management of investment portfolios for public, corporate or union pension benefit funds, foundations or endowments. He has been an IAC member for the Board since 2013, providing advice and insight for trustees and staff as the fund continues to diversify and transitions to more in-house management of funds. Treasury staff believes that Mr. Shaw has been a valued contributor and advisor for the staff and trustees. He has advised staff that he would like to continue as an IAC member.

RECOMMENDATION:

That the Board reappoint Robert Shaw to a three-year term on the Investment Advisory Council beginning July 1, 2016 and ending June 30. 2019.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Private Equity Policy Revision – Co-investments

ACTION: X

DATE: April 21, 2016

INFORMATION:

BACKGROUND:

Staff periodically reviews the Private Equity Partnerships Portfolio Policies and Procedures for consistency with the current investment environment. Access to co-investment opportunities has grown meaningfully over the past several years. A private equity co-investment is an opportunity for limited partners to invest directly in individual private equity deals on a low-or-no-fee basis. Co-investment opportunities are usually offered by general partners when the underlying deal is too large for the private equity fund alone or when the fund has reached concentration limits. A well designed co-investment program has the potential to add meaningfully to returns through significant cost savings.

Operating a successful co-investment program over the long term is a resource intensive process. An investor needs to get good access to meaningful co-investment opportunities, investigate and diligence them in a short timeframe, and ultimately put together a diversified portfolio of co-investments each year.

STATUS:

Pathway Capital Management started a co-investment program on behalf of some of their clients in 2014 and uses a combination of dedicated investment professionals and shared resources to make co-investments. In the two years that Pathway has run their program, they have invested $394 million in 18 co-investments (including 3 pending deals) sourced from over 50 qualified general partners. Staff met with the Pathway professionals managing co-investments and conducted a review of the program. Pathway has high quality deal flow, an intensive due diligence process, and the resources to make a meaningful number of diversified investments during each year. The Pathway co-investments made to date all appear to be high quality and performing well. Staff recommends that the ARMB allow Pathway to make co-investments on the ARMB's behalf. The initial allocation is expected to be 15% of annual commitments.

RECOMMENDATION:

That the Alaska Retirement Management Board adopt Resolution 2016-06 revising the Private Equity Partnerships Portfolio Policies and Procedures to allow for co-investments and direct staff to negotiate a contract amendment with Pathway Capital to implement a co-investment program.

Attachment: 2016-06 Private Equity Policy Revision

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD

Relating to Private Equity Partnerships Portfolio Policies and Procedures

Resolution 2016-06

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS the Board has authorized investment in private equity; and

WHEREAS the Board will establish and from time to time as necessary modify guidelines for private equity.

NOW THEREFORE BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopts the attached Private Equity Partnerships Portfolio Policies and Procedures, regarding investment in private equity.

This resolution repeals and replaces Resolution 2014-25

DATED at Anchorage, Alaska this ______ day of April, 2016.

____
Chair

ATTEST:

____
Secretary

Changes to the policy are red-lined: The only substantive change is to section D.3 on page 4.

Formatte

ALASKA RETIREMENT MANAGEMENT BOARD

PRIVATE EQUITY PARTNERSHIPS PORTFOLIO POLICIES AND PROCEDURES

Revised ~~9~~4/~~2014~~2016, Adopted by Resolution ~~2014~~2016-~~25~~06

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ALASKA RETIREMENT MANAGEMENT BOARD

PRIVATE EQUITY PARTNERSHIP PORTFOLIO POLICIES & PROCEDURES

I. INVESTMENT OBJECTIVES

A. INVESTMENTS IN PRIVATE EQUITY AND DEBT ASSETS

The Alaska Retirement Management Board ("ARMB") has determined that, over the long term, inclusion of private equity and debt investments (herein after referred to collectively as "private equity") would enhance the ARMB's expected portfolio investment characteristics. Specifically, as a result of the possibility of enhanced rates of return over publicly traded securities and returns that have low correlation with those associated with other major asset classes, the use of private equity investments tends to increase the portfolio's overall long-term expected real return, and reduce year to year portfolio volatility.

Private equity investments involve the purchase of unlisted, illiquid common and preferred stock, and to a lesser degree, subordinated and senior debt of companies that are in most instances privately held. Investments in company private securities are made primarily through institutional blind pool limited partnership vehicles, further described in Section I.D. The private equity strategies to be pursued are further described in Section II.A.

The ARMB's investment policies are determined by the Board of Trustees. In general, ARMB's goal is to achieve the actuarial return at the minimum risk.

Private equity investments of the ARMB shall be made in a manner consistent with the fiduciary standards of the prudent expert rule: (1) for the sole interest of the ARMB's participants and their beneficiaries; and, (2) to safeguard and diversify the private equity portfolio. The selection and management of private equity assets will be guided to preserve investment capital and to maintain prudent diversification of assets and management responsibility. The diversification objective is required to manage overall market risk and the specific risks inherent in any single investment or management selection.

B. ASSET ALLOCATION

The ARMB commitment to private equity investments shall remain within the limits authorized by the Board of Trustees. The ARMB recognizes that it may be necessary to make capital commitments in excess of the target allocation in order to achieve and maintain the allocation target.

An important implementation goal for ARMB is to spread out timing of new commitments so as to avoid an undue concentration of commitments in any one fiscal year. In order to efficiently build the ARMB's private equity portfolio, Staff has the flexibility to approve in writing a variance of up to 50% beyond an investment manager's annual commitment target. Over the long-term it is expected that approximately equal amounts of new funding will be committed each year to garner the benefits of time diversification.

C. PORTFOLIO PERFORMANCE

The ARMB shall use the following rate of return tests to evaluate the performance of the private equity asset class:

1. Total Return (Realized and Unrealized Gain/Loss Plus Income)

The private equity portfolio is expected to generate a minimum total rate of return that meets or exceeds the Russell 3000 Index plus 350 basis points. Performance will be measured on both an Internal Rate of Return (IRR) and a Time-Weighted Return basis, net of investment management fees, expenses and any incentive compensation. On investment, any individual fund is expected to produce a minimum return that meets or exceeds the current capital market assumption for Broad Domestic Equity (Russell 3000) plus 350 basis points to contribute to the overall portfolio return expectations.

The primary investment strategies included in the allocation will provide the opportunity for long term capital gains.

The portfolio and individual investments will be benchmarked against the universe contained in the Thomson ONE database. Benchmarks are published for venture capital and buyout and subordinated debt funds. For restructuring funds and other special situation private investments, returns should be competitive with buyout and subordinated debt funds, with the return falling between the two.

2. Risk

Private equity investments are expected to provide a higher level of return than many asset classes, but they also have a higher degree of risk. Private equity generally involves investments in the unlisted securities of private companies through closed-end partnerships. These investments are illiquid since there is no efficient resale market. Private equity also has high fees and the potential for the fees to overcome early investment returns resulting in a return j-curve, where early net returns are generally negative. There are portfolio transparency and valuation issues and the potential for high leverage in certain strategies. The asset class also has incomplete data and benchmarks and high return dispersion between managers.

In private equity investing there is the risk of sustaining a loss on any of the individual investments. It is the ARMB's expectation that, while specific investments may incur losses of all or part of capital invested, a diversified portfolio of holdings will produce a positive rate of return in the expected range set forth in Section I.C.1., above.

D. PROGRAM MANAGEMENT

The selection and management of assets in the private equity portfolio will be guided to generate a high level of risk adjusted return, provide a moderate amount of current income, and to maintain prudent diversification of assets and specific investments.

With private equity investments, there is an inherent risk that the actual return of capital, gains and income will vary from the amounts expected. The ARMB shall manage the investment risk associated with private equity investments in several ways:

1. Institutional Quality

All assets must be of institutional investment quality. Institutional quality will be defined as being of a quality whereby the investment would be considered acceptable by other prudent institutional investors (i.e. insurance company general accounts and separate accounts, commercial banks and savings institutions, public employee retirement systems, corporate employee benefit plans - domestic and foreign, and other tax-exempt institutions).

2. Diversification

The private equity portfolio shall be diversified as to investment strategy, timing of investment, size and life cycle of investment, industry sector, investment sponsor organization (i.e., general partner group), and geographical location. Diversification reduces the impact on the portfolio of any one investment or any single investment style to the extent that any adversity affecting any one particular area will not impact a disproportionate share of the total portfolio.

Investments will be made such that at full investment a maximum of 20% of the total private equity allocation can be invested at any point in time with any single, general partnership, entity or related organization. No single private equity investment strategy will comprise more than 60% of the allocation. It is also recognized that during the portfolio development and wind-down stages the full investment parameters may not, of necessity, be met. The ARMB is permitted to own up to 51% of any particular partnership subject to the partnership sponsor limitation above.

The scope and size of Alaska's program is such that significant investments in fewer, more concentrated partnership investments are preferred to smaller investments in more numerous partnerships. However, investing with the highest quality partnerships remains the top priority. While Alaska has not set a minimum dollar amount per partnership, the investment manager will be charged with deploying the capital efficiently, such that funding targets are achieved with a reasonably small number of partnership holdings. Average investment size will be monitored.

Long-term diversification targets among eligible investment strategies will be set forth in Section II.A. Eligible Investments, and reviewed annually or as necessary. Interim investment goals toward the implementation of the private equity program will be set forth in an annual *Tactical Plan* (Appendix A) as described herein.

3. Ownership Structure

Account and Investment Structure: The ARMB's ownership structure will comprise separate account relationships with one or more fiduciary investment managers and direct investments by the ARMB. The separate account investment managers will in turn make commitments to private equity limited partnerships, on ARMB's behalf, on a discretionary basis. The ARMB may also make partnership investments directly or through authority delegated to the CIO in section III.A.1 of this policy. All investments will be subject to portfolio diversification targets established in the *Policies and Procedures*, approval of an annual *Tactical Plan* by the ARMB, and with prior notification as to program compliance via an *Investment Disclosure Form* (Appendix B). Other commingled vehicles or separate account investments, which are not limited partnership units, may only be purchased by the investment manager, subject to a structural compliance review by the staff, wherein the ARMB must approve any such proposed investment.

Direct Co-Investments and Direct Investments: Certain investment managers offer direct placement services on their client's behalf. Suitable arrangements for co-investment and direct investment authorization may be incorporated in the investment management agreement. Co-investments are approved by the ARMB and direct investments have not been approved by ARMB.

Direct co-investments entail providing additional funding to specific company investments being made by the limited partnerships to which ARMB has commitments. In specific instances the general partner will invite the limited partners to provide additional capital when an investment is of a size which exceeds the partnerships diversification parameters. Co-investments will only be allowed in the same class of security as the partnership investment. Direct investments entail investments in companies that are sourced by the investment manager organization.

4. Reporting System

There shall be a comprehensive reporting and monitoring system for the entire portfolio, investment manager(s) and individual investments. Situations of underperforming investments, portfolio diversification deficiencies from the *Policies & Procedures*, and conflicts of interest can then be identified, facilitating active portfolio management. Further definition of this reporting system is provided in Sections III.C.2.b. "Investment Management Ongoing Operations" and III.C.3. "Investment Management Portfolio Accounting and Financial Control."

5. Distributions

ARMB prefers to receive distributions from the partnership investments in the form of cash, whenever possible. Otherwise, any in-kind (i.e., security) distributions should be freely tradable and, whenever possible, in the form of unrestricted stock. ARMB prefers to receive the cash realization of any in-kind distribution as soon as practicable, given market conditions. The investment manager will be responsible for managing to cash any in-kind distributions. The investment manager shall have well-defined and clearly articulated procedures in place for ensuring the orderly liquidation of in-kind distributions and the timely settlement of any liquidation transactions. ARMB's staff will monitor the investment manager's performance of the distribution functions.

6. Performance Measurement

The investment manager will provide cash flow, valuation, and any other requested information to ARMB's Staff and general consultant quarterly, and ARMB's custodian bank on a monthly basis. Regarding valuations the investment manager will notify the Staff of any instances where the investment manager is using different carrying values from those reported by the general partner.

Performance will be calculated on both a time-weighted and dollar-weighted (internal rate of return or IRR) basis, with primary emphasis being placed on the internal rate of return. The rate of return calculations will be net of all partnership fees and expenses, but gross of investment manager fees and expenses. So that the performance numbers reported by the manager and the custodian bank are the same, the manager will be responsible for reviewing the custodian's figures as to timing, amount, value of in-kind securities at distribution and reported net asset value, and reconciling any discrepancies. Staff will calculate and report a private equity portfolio IRR at least annually as part of the private equity tactical plan.

In-kind Distributions: Partnerships will be valued on the distribution price of the in-kind security or other valuation method stipulated in the partnership agreement. Any change from distribution price to realized price of the in-kind distributions will then be monitored as a separate component of the total portfolio return.

Benchmarks: For IRR calculations, the Vintage Year methodology will be used for purposes of performance comparisons to the industry. For time-weighted returns, comparable publicly traded market indicators (such as small cap indices) will be employed.

7. Lines of Responsibility

Well-defined lines of responsibility and accountability will be required of all participants in ARMB's private equity investment program. Participants are identified as:

Board of Trustees -	The fiduciaries appointed by the Governor to represent the beneficiaries' interest, who retain final authority over all private equity investment decisions.
Staff -	Investment professionals on the staff of the Department of Revenue and assigned ARMB responsibilities who will assist in the private equity investment program's design, implementation and administration.
Investment Manager(s) -	Qualified fiduciaries who provide institutional private equity investment management services and maintain a discretionary relationship with ARMB in implementing the private equity program. In separate account relationships the investment manager ("Manager") must be a Registered Investment Advisor under the Investment Company Act of 1940, registered with the Security and Exchange Commission.
Consultant -	Professionals retained to support ARMB through the provision of expert private equity and alternative investment program knowledge and technical support.

The responsibilities, with respect to the private equity portfolio, of the parties cited above are outlined in Section III.A.1-4. Unless otherwise stated, the remainder of the guidelines contained herein pertain to the limited partnership investments entered into by the ARMB.

E. CONFLICTS OF INTEREST

1. Manager Proprietary Products -- In private equity investing, unlike other asset classes, there may be situations wherein the investment manager may recommend its proprietary investment product(s) for investment. The investment managers do not have discretion to invest in their own proprietary products. If the ARMB is considering an investment manager's proprietary investment product(s), staff shall use the ARMB's private equity consultant to assist in analyzing the suitability of the investment(s).

2. Allocation of Investments Among Accounts -- There may be instances where the manager will need to allocate an investment opportunity among a number of clients or a competing product (i.e., fund-of-funds). Suitable protective covenants or processes for resolving conflicts in allocation among accounts will be incorporated in the investment management agreement.

3. Personal Investments -- The investment manager's employees are permitted to invest personally or otherwise have beneficial interest in investments held on behalf of clients such as ARMB, only upon the ARMB's first securing a full and appropriate allocation. Similarly, the investment manager's employees are permitted to sell an interest in investments that are also held by the ARMB only after the ARMB's holding has been first and fully liquidated. The investment manager will provide ARMB with its policies for personal investments by employees as an attachment to the Investment Management Agreement, and notify the Staff of any changes. In instances where the manager or its employees are securing an investment or beneficial interest, notice must be provided to ARMB at least five business days prior to the closings for either party.

4. Other Conflicts of Interest -- When and if other conflicts of interest become apparent, suitable protective covenants or processes for resolving conflicts will be incorporated into the investment management agreement.

II. INVESTMENT POLICIES

The private equity program will be guided by long-term target ranges to eligible investment strategies listed below. Each year the program will be further implemented and modified in accordance with an *Annual Tactical Plan* prepared by staff and the Investment Managers, reviewed by Staff and approved by the Board.

A. ELIGIBLE INVESTMENTS

The following private equity strategies and investment types will be considered eligible for the ARMB's portfolio. Long-term ranges are established for each strategy. Staff and the Consultant will seek to manage the allocations toward the mid-point of the ranges at full investment.

1. Venture Capital: Expected Range: 15% to 40%, Target: 25% – Investments in newer high growth companies typically addressing technology, life sciences and other specialty growth industries. Venture capital partnerships will be allocated into the following three categories and the manager will endeavor to select partnerships that represent the strategies in the appropriate amounts and diversity.

Early-Stage: Seed or start-up equity investments in private companies.

Later-Stage: Investments in more mature companies (e.g., with developed products, revenues, and potentially profits) to provide funding for growth and expansion.

Multi-Stage: Investments in venture capital companies at various stages of company development, including early-, late- and any other interim stages of development.

2. **Buyouts/Acquisition:** Expected Range: 30% to 60%, Target: 45% – Partnerships which provide funding to acquire majority or controlling interests in a business or product lines from either a public or private company. These partnerships are generally diversified by industry and other relevant measures. Buyout partnership cover company size ranges from very large to small-market.

3. **Special Situations:** Expected Range 20% to 40%, Target: 30% – Partnerships with private corporate finance investment strategies that do not fall under the prior two categories. The manager will seek to diversify the portfolio across various sub-strategies. Examples include:

   Hybrid Partnerships: Funds that have broad strategy mandates and may invest materially in non-control investment structures or a variety of strategies that would preclude a simple venture capital or buyout categorization.

   Industry Specific: Funds that target a specific industry (e.g., energy, financial services, media and communications, etc.). These funds may be considered as having greater industry specific risk than more diversified buyout funds.

   Subordinated Debt: Partnerships that make debt-related investments in unsecured or junior obligations in financings. These generally take the form of subordinated debentures or preferred stock. They typically earn a current coupon or dividend and have warrants on common stock or conversion features.

   Restructuring/Recovery: Investments made in distressed or poorly performing companies, with the intent of initiating a recovery via financial restructuring or the introduction of management expertise. Partnership investments may include debt and/or equity securities.

   Other: There are private equity/corporate finance partnerships that pursue strategies different from those cited above which the manager may, in its discretion, seek to participate in.

Exposure to these strategies may be pursued through direct partnership investments, fund-of-one, and/or commingled fund-of-funds vehicles.

B. GEOGRAPHICAL LOCATION DIVERSIFICATION

Although the priority of the portfolio should be to achieve diversification by investment strategy, another measure of diversification is by geographical location. Over the long-term, the ARMB portfolio should seek portfolio diversification with regard to major regional areas both domestically (i.e., Northeast, Mid-Atlantic, Southeast, Midwest/Plains, Southwest/Rockies, West Coast, Pacific Northwest), and internationally (i.e., Europe, Pacific Basin, South and Latin America).

International private equity investments shall comprise 20-45% of the private equity investment allocation measured at the portfolio company level, and shall be diversified in the context of the total portfolio.

C. INDUSTRY SECTOR DIVERSIFICATION

The ARMB portfolio will seek to diversify by industry sector (i.e., Biotechnology, Computers, Financial Services, Healthcare, Medical, Media/Communications, Electronics, Software, Consumer/Retail, Basic Industry, Other, etc.) such that no one industry classification will represent more than 25% of the private equity portfolio.

The Staff will review the industry classification methodology employed by the investment manager and will adopt the methodology if it is deemed sufficient, or work with the investment manager to develop mutually satisfactory categories.

D. LIFE CYCLE DIVERSIFICATION

Commitments to partnership investments will be staged over time. It is ARMB's long-term goal to spread out investment timing such that new commitments will be made each fiscal year. This policy will have the effect of dollar cost averaging the ARMB's portfolio over business cycles and helps insulate the portfolio from event risk. Capacity to make commitments will be allotted to the investment manager in accordance with the ARMB's investment projection model, which will be updated as part of the *Annual Tactical Plan,* described here-in, or as necessary.

E. INVESTMENT SPONSOR (GENERAL PARTNERSHIP GROUP) DIVERSIFICATION

The ARMB portfolio will seek to diversify by issuer of limited partnership securities, and other specific investments sponsors. No more than 20% of the ARMB's private equity portfolio net asset value will be invested with any one investment sponsor organization. Net asset value is defined as the carrying value of the investments reported by a partnership's general partner in the quarterly financial statements.

It is ARMB's intention to keep the total holdings of the portfolio to a reasonable number. Given the significant total dollar size of the ARMB's private equity net asset value target, large concentrated investments in fewer partnerships, are preferred to smaller investments in more numerous partnership securities. However, the ARMB recognizes that investing with the highest quality partnerships remains the top priority and smaller investments in venture capital will be warranted.

III. PROCEDURES FOR INVESTMENT

A. GENERAL ALLOCATION OF RESPONSIBILITIES

The private equity partnerships program shall be implemented and monitored through the coordinated efforts of the Board of Trustees for the Alaska Retirement Management Board (the "Board"); the ARMB's Staff (the "Staff"); the qualified Investment Investment Manager(s) (the "Manager") and the Consultant ("Consultant"). Delegation of responsibilities for each participant is described in the following sections.

1. Board of Trustees

The Board of Trustees shall approve the investment policies and objectives which the Trustees judge to be appropriate and prudent to implement its strategic plan for the investment of ARMB's assets; review the performance criteria and policy guidelines for the measurement and evaluation of the investment managers of the ARMB's assets; review the Consultant and Staff's recommendations to retain a qualified investment manager(s) and set discretionary investment limits; supervise the investment of ARMB's assets to ensure that the ARMB's investments remain in accordance with the Board's strategic planning and the Alaska Retirement Management Board's Objectives and Policies and the Private Equity Partnerships Portfolio *Policies and Procedures* documents. The Board shall select and make ongoing retention decisions regarding all service providers including the investment manager.

The Board of Trustees will guide the execution of the program by review and approval of a long term target ranges for private equity strategies prepared by Staff, which will be updated and revised periodically as appropriate; and a short term *Annual Tactical Plan* prepared by the Investment Manager, reviewed by Staff, and approved by the Board which details goals and objectives for the next 12 months. The Board will monitor the program's progress and results through a performance measurement report prepared quarterly by the Investment Manager and reviewed by Staff.

Direct Investments by the ARMB in Private Equity Partnerships

The ARMB shall set an allocation target for direct investments in private equity partnerships as part of the Annual Tactical Plan. For direct investments, the ARMB delegates authority to the Chief Investment Officer ("CIO") to commit the annual allocation target to a number of direct investments or fund-of-fund investments with private equity partnerships as follows:

a. The CIO has the authority to commit to private equity partnership investments of up to $100 million per fund. An investment with a manager that is new to

the ARMB's portfolio requires concurrence on the investment decision from the ARMB private equity consultant or gatekeepers.

b. The CIO has the authority to engage consultants and take other action as may be necessary to ensure sufficient due diligence is performed on all investments under consideration.

c. With respect to the direct investment allocation target set by the ARMB annually, the CIO has the authority to commit up to an additional one percent of total defined benefit plan assets over the target to accommodate specific investment opportunities or manage the ARMB's allocation to private equity.

The CIO shall exercise this discretion within Board approved asset allocations, investment plans, and guidelines as they may apply.

The CIO will provide prior notification to the ARMB Chair before committing to any investment under this authority. All discretionary CIO investment actions shall be reported to the Board. With respect to direct investments, Staff will assume the relevant investment manager responsibilities addressed in Section III.C of this document and the Consultant will review the performance of the direct investments.

2. Staff

The Staff will develop draft investment objectives and policy language for Board consideration. The Staff will guide the execution of the program by developing long-term target ranges for private equity strategies, which will be updated and revised periodically as appropriate. The Staff will oversee the Manager in preparing a short term *Annual Tactical Plan*, which detail goals and objectives for the next twelve months. The Staff will also review the Manager's quarterly portfolio reports, review the Manager's proposed *Investment Disclosure Forms* (Appendix B) for compliance with the strategic plan and conflicts of interest, and review the Manager's and the portfolio's performance in relation to assigned responsibilities.

The Staff will coordinate program compliance among all participants and communicate the investment policies, objectives and performance criteria to the investment manager(s). The Staff will coordinate the receipt and distribution of capital.

The Staff and Consultant will identify qualified investment investment manager(s) for implementation of private equity investment program, and will advise the Board of Trustees of any material changes in the manager organization(s).

3. Investment Manager(s)

The Investment Manager(s) shall acquire and manage, on a discretionary basis, private equity investments on behalf of Alaska and in accordance with the Investment Objectives as described in Section I of the ARMB's *Private Equity Policy and*

Procedures document and the Investment Policies as described in Section II.

The choice of withholding discretion from the Managers for any investment vehicle that is not a limited partnership (or other limited liability entity), represents a policy decision that, among other things, is intended to protect the ARMB from liability beyond the invested capital.

The asset allocation executed by the Manager will be dictated by the target strategy ranges established in the *Policies and Procedures* and the *Annual Tactical Plans.*

4. Consultant

As approved by the Board, the Consultant shall advise on program development, conduct Investment Manager searches when requested; and provide independent, third party advice and information. The Consultant will also be available to be retained to conduct special project work when requested by the ARMB.

B. INVESTMENT PROCEDURE

Private equity investments in compliance with the ARMB's Policies (Section II) and the Investment Objectives (Section I) shall be acquired through the following process:

Eligible Investments and Target Ranges: As part of the *Policies and Procedures*, the Staff will prepare a long-term target capital allocation ranges for eligible private equity strategies (Section II.A.) after a review of investment criteria, performance expectations, and other relevant program requirements.

Annual Tactical Plan: Annually, Staff and the Investment Manager(s) will prepare a tactical plan which reviews the current status of the portfolio, recent historical and prospective market conditions, and proposes the steps to be taken over the next twelve month period to further implement the long-term strategic plan. The filing of ongoing *Annual Tactical Plans* will occur on the quarter-end every 12 months following the quarter in which the original plan was filed. The *Annual Tactical Plan* will be reviewed by the Staff and approved by the Board. The outline of concepts to address in the *Annual Tactical Plan* is provided in Appendix A.

Specific Investments: The Investment Manager will identify and evaluate limited partnerships and, as appropriate, other investment vehicles that are in compliance with ARMB investment guidelines and current *Annual Tactical Plan*. The Investment Manager will be responsible for all aspects of evaluation and closing, subject to prior notice via an *Investment Disclosure Form*, an example of which is provided in Appendix B.

C. SPECIFIC INVESTMENT MANAGER RESPONSIBILITIES

1. Funding Procedures

The Investment Manager shall provide the ARMB, on a best efforts basis, with five (5) days notice of drawdowns. ARMB shall also be provided with documented wiring instructions in advance.

2. Investment Management

Investment Managers are directly accountable for the following investment management responsibilities. This section designates certain investment responsibilities that the Investment Manager will perform or cause to be performed. Fees and expense reimbursements for these duties are outlined in the Manager's contract.

a. Investment Selection -- The Investment Manager will be responsible for evaluating investment opportunities and selecting, on a discretionary basis with fiduciary responsibility, private equity investments to be made on behalf of ARMB.

The screening and selection will be made with a view to maximize ARMB's risk adjusted rate of return, within the parameters and allocations of each private equity strategy as set by the Board of Trustees in the *Polices and Procedures*.

An *Annual Tactical Planning* process will be used in determining the number and types of investments within each strategy. The manager will also take into consideration relevant overall portfolio diversification considerations as set forth in the Objectives and Policies statement and Program Management (Section I.B.) of this document. The process will include, but not be limited to, the following services:

(1) *Annual Tactical Plan* preparation. This report outlines the steps the investment manager will take during the next fiscal year to further implement the ARMB's adopted strategic plan.

The *Annual Tactical Plan* will include a review of the current status of the portfolio, perceived investment environment, the types and number of partnerships to be sought and underlying rationale, and goals for other management responsibilities such as situations being monitored and adding value.

(2) Review and maintain a log of all opportunities available in the market over time, as well as investments directed to the manager by the ARMB.

(3) Screen and evaluate all opportunities to identify investments that will provide the most attractive risk and return characteristics and are a fit with the portfolios long-term and short-term objectives.

(4) Conduct full and proper due diligence fully documenting the process. Due diligence will be conducted to a standard of completeness attributable to a prudent expert. The Investment Manager will make available for review by the ARMB, or its agents, the Manager policies, procedures, and standards for conducting due diligence, and the due diligence documentation performed on any investment made on the ARMB's behalf. The ARMB recognizes that there may be instances where the Investment Manager possesses confidential information which for legal or other verifiable reasons cannot be disclosed to the ARMB. On-site visits at the General Partners' main office will be a mandatory part of investment due diligence. In certain rare circumstances, the Manager may satisfy the requirement for an on-site visit if the Manager has made a relevant visit to the General Partner's main office within one year of the commencement of investment due diligence. The minimum requirements of due diligence will include the quality and expertise of the General Partner (including relevant experience, reputation, deal flow, staff turnover, etc.), historical performance, structure of the Limited Partnership (including, but not limited to, the alignment of interest of the General Partner and the Limited Partners) and diversification by industry, geography, strategy, etc.

(5) The Investment Manager will submit an *Investment Disclosure Form* to Staff at least five (5) business days prior to making a commitment on ARMB's behalf.

(6) Negotiate investment terms and conditions, partnership agreements and other closing documents on ARMB's behalf, with a view to maximize returns, minimize expenses, safeguard the ARMB's assets, and secure investor rights; and make investments on the ARMB's behalf. The investment manager shall provide ARMB counsel the opportunity to review partnership agreements and related documents prior to their execution.

(7) The investment manager will be charged with deploying the capital efficiently, such that funding targets are achieved with a minimal number of partnership holdings. Due to the scope and size of ARMB's program significant, concentrated investments in fewer partnership investments are preferred to smaller investments in more numerous partnerships. The manager will include discussions of the number and size of planned investments in the periodic portfolio planning and reporting documents.

b. Ongoing Operations -- The Manager shall manage or cause to be managed, each investment made such as to enhance the ARMB's value in the investment. The Manager shall be responsible for conducting or supervising the following services with respect to each investment:

(1) Monitoring and Voting -- Maintaining close communication with the General Partners of the investments, maintaining an awareness of and documenting the progress and level of performance of each investment. This will include

attendance at annual partnership meetings and, as appropriate, sitting on limited partner advisory boards. It will also involve voting on partnership and other portfolio securities matters on ARMB's behalf as need arises.

(2) Adding Value -- The Manager shall take all necessary or appropriate steps consistent with applicable capital and operating budgets to assure the ARMB's investment is managed to or above its anticipated performance level.

(3) Disbursement, Receipt and Cash Management -- Develop procedures for funding commitments on a timely basis and coordinating the receipt of cash distribution from the partnership investments, including a policy for the orderly liquidation of in-kind distributions (i.e., securities distributions) received from partnerships. The policy for liquidating in-kind distributions should include but not be limited to the Manager's process for deciding when to sell distributed shares and actions the Manager will take to ensure timely settlement of stock sales.

(4) Books and Records -- The Manager shall maintain books of account with correct entries of all receipts and expenditures incident to the management of the investment. These books, together with all records, correspondence, files and other documents, shall at all times be open to the inspection of the ARMB. The Manager shall maintain complete and accurate records of all transactions related to the managed investment, including receipts and all correspondence relating thereto on such forms as the ARMB's auditors may reasonably require and make such records available for inspection and copying by ARMB at all reasonable times. The Manager shall bear the costs associated with the retention of such records and if ARMB shall request copies of such records, the Manager shall bear the cost of duplicating and sending such records to the ARMB.

(5) On-Going Review -- The Manager shall keep itself informed of the overall market conditions relative to the managed investments and the managed investments' competitive position in the applicable investment strategies. The Manager will also be responsible for ensuring compliance with partnership agreements, attending to amendments, resolutions, voting proxies, and other investment related matters. All such activities will be undertaken with a view toward maximizing value to ARMB.

(6) Disposition Review -- The Manager shall review the managed investments with respect to continued timely return of capital, income and gains. The manager will be responsible for managing to cash any in-kind (i.e., security) distributions received from the partnership investments.

(7) Notice -- The Manager shall notify the Staff as soon a practicable in writing of any investigation, examination or other proceeding involving the investments or investment sponsors commenced by any regulatory agency or of any action, suit or proceeding commenced against or by the Manager or an investment sponsor.

3. Portfolio Accounting and Financial Control

The Manager's accounting, reporting and financial control and administration system shall meet the following objectives:

a. Financial Control -- The Manager will provide control systems to protect assets, detect errors and insure the reliability of information generated by the accounting system.

c. Investments' Financial Statements -- On a quarterly basis, the Manager will receive from investee partnerships unaudited financial statements, and annually, audited financial statements.

d. Accounting Policies -- Accounting policies for ARMB are outlined below:

(1) Current Value Reporting -- Accounting data shall be computed using current values provided by the General Partners and Investment Sponsors of the investments. The Manager will make note of instances where performance presentation standards are not in compliance with Global Investment Performance Standards (GIPS®). The Manager will be held to a standard of reasonable care in verifying that the General Partners valuations reasonably reflect the underlying value of the investments. The Manager will make special note of investments which may be materially and permanently impaired in relation to the General Partners carrying value, and will notify the Staff of such investments, as soon as practicable, and in no instance later than by incorporation in the next quarterly performance measurement report.

4. Reporting Requirements

a. Manager Quarterly Report -- On a quarterly basis, within 45 days of quarter-end, the Manager(s) shall provide the Staff with a report on the portfolio which will address activities occurring during the quarter an updated list of holdings, cash flows, valuations, IRR, and any and all other items of which ARMB should be apprised.

b. Custodian Bank Monthly Statement -- On a monthly basis, the Manager(s) shall provide the Custodian a report of ARMB's account cash flows and valuations, and any other information reasonably requested.

c. Annual Tactical Plan -- Within 120 days of calendar year end, Staff, with input from the Investment Managers, shall prepare and submit an *Annual Tactical Plan* for approval of the Board. The *Annual Tactical Plan* shall cover the topics outlined in Appendix A and will include a review of the current status of the portfolio and outline the steps anticipated toward portfolio development over the course of the coming fiscal year.

d. Investment Disclosure Form -- At least five (5) business days prior to making a commitment on behalf of ARMB, the Manager will provide to the Staff an *Investment Disclosure* form. The investment disclosure form will be reviewed by the staff regarding an investments fit within the *Policies and Procedures*, *Annual Tactical Plan*, and any possible conflicts of interest.

Any questions or discussion items with regard to an investment's fit within the portfolio structure can then be reviewed prior to the investment manager executing the subscription documents.

e. Other Information -- The Investment Manager will also provide any other reasonable information requested by the Staff, or the ARMB's Custodian Bank, or other agent of ARMB.

D. SPECIFIC CONSULTANT RESPONSIBILITIES

The Consultant will provide consultation on the initial development and ongoing review and recommendation of revisions to ARMB's Policies and Objectives, *Private Equity Policies and Procedures*, and assist with Investment Manager searches when requested by the ARMB. The Consultant will provide independent third party advice and information, and will also be available to be retained to perform special projects as requested by the Board.

Appendix A

ALASKA RETIREMENT MANAGEMENT BOARD
PRIVATE EQUITY
ANNUAL TACTICAL PLAN GUIDELINES

Tactical Plan: The Tactical Plan is a report which outlines the steps to be taken in the next 12 month period to further implement the private equity portfolio, and any other actions or considerations germane to the active management and success of the portfolio. It also documents the reasons for the particular courses of action to be taken, and importance of items under consideration.

The Staff reviews the Tactical Plan and recommends Board of Trustees approval of the finalized plan. All sections should be as brief as possible and should address the following issues with some flexibility with regard to format:

I. FUNDING LEVEL

Annual Tactical Plan Period: 1/1/xx through 12/31/xx

A. Funding Tables:

1. *Current Funding Position (As of x/xx/xx)*

Total Fund Market Value	$xx billion
% Target for Private Equity	7%
Total Private Equity Allocation	$xx million
Current Net Asset Value Deficit/(Surplus)	$(xx) million

2. *Projected Funding Position*(1)

Five Year Projected Market Value	$xx billion
% Target For Private Equity	$xx million
Total Private Equity Allocation	$xx million
Amount Available for Investment in Current Tactical Plan Period:	$xx million

3. *Analysis of Funding by Strategy*

II. DIVERSIFICATION

A. Strategy: (Commentary)

B. Industry Diversification: (Analysis and Commentary)

C. Geographic Diversification (Analysis and Commentary)

D. Stage of Investment: (Analysis and Commentary)

E. Current Portfolio Risk and Return: (Commentary)

III. MARKET CONDITIONS

A. Market Conditions: Discussion of Partnership Market.
1. Past 12 months.
2. Next 12 months.
3. Conclusion.

IV. PROSPECTIVE INVESTMENT

A. Investment Objectives:

1. Types: Strategies to receive the foremost attention or priority.
   a. Venture Capital
   b. Buyouts
   c. Special Situations

2. Expected impact on the portfolio regarding:
   a. Return
   b. Risk
   c. Diversification

D. Dollar amount to be invested

E. Impact on the portfolio.

F. Diversification considerations: Strategy, Geographic, Industry, and any other relevant considerations.

V. MONITORING

A. Specific situations being monitored, underperforming investments.

B. Actions to be initiated or in progress with existing investments.

C. Other specific goals related to the monitoring of the ARMB's investments.

V. EXITING

A. Pending distributions or liquidations.

B. Any other relevant considerations relating to existing ARMB investments.

VI. OTHER

A. Other items relevant to the ARMB's portfolio.

SUMMARY

Investment Objectives: Summary of basic goals for the portfolio for the next 12 months.

APPENDIX:

Projected Funding Schedule and any other attachments the Investment Manager would like to submit.

ALASKA RETIREMENT MANAGEMENT BOARD
Prospective Private Equity Partnership Investment Disclosure Form

Please provide the following information in hard copy to the ARMB at least 5 business days prior to legally committing to any investment on behalf of the ARMB, as follows:

Mr./Ms. _______ ________, Title: Alaska Retirement Management Board, 333 Willoughby Avenue, 11th Floor, Juneau, AK 99811. Ph: 907-465-2350, Fax: 907-465-2394

1. General Information:

Name of Partnership: ____
GP/Investment Advisor: ____
Address: ____
____
Contact Person: ______________________ Title: ____________________
Phone: ______________________ Fax: ____________________

2. Investment Size:

Anticipated Total Partnership Size: $___________
Anticipated Commitment by the ARMB $___________
% ARMB Commitment of Total Partnership: ___________%
# of other clients placed in investment ___________
Total Ownership of Advisor's Clients $___________ (excluding Alaska)

3. Proposed Category:

_____ VC Early
_____ VC Multi
_____ VC Late
_____ Buyouts - Large
_____ Buyouts - Small/Medium
_____ Buyouts - Industry Consolidation
_____ Special Situations - Hybrid
_____ Special Situations - Strategic Block
_____ Subordinated Debt
_____ Restructuring
_____ Project Finance/Other Cash Flow

4. Provide Brief Description of Investment Objective:

5. Description of Fit with the ARMB's Annual Tactical Plan:

6. Disclosure/Other Comments:

A. Please describe any prior investment history with the general partner group and of any existing holdings affiliated with the general partner group.
B. Are there any items associated with the investment of which the ARMB should be aware?
C. Are there any other comments the Investment Manager would like to mention?

8. Attachments:

A. Include Offering Memorandum and any other relevant materials.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Investment Guidelines for Domestic, International, and Alternative Equities	ACTION:	X
DATE:	April 22, 2016	INFORMATION:	

BACKGROUND

The "Investment Guidelines for Domestic, International, and Alternative Equities" (Guidelines) were most recently revised and approved by the Alaska Retirement Management Board (Board) in June 2015, which clarified that the aggregate total of any security held by ARMB would not include shares of mutual funds.

A commission recapture program is a program in which commissions paid to equity brokers for executing transactions are refunded to owners of the assets at a negotiated rate. Not all brokers participate in these programs with all vendors.

Execution only transactions are those transactions that do not receive additional services from the executing broker such as research or investment related advice.

STATUS

ARMB's current investment guidelines provide that when in the judgment of the manager, purchase or sale execution and transactions are competitive, approximately 30% of all listed large capitalization domestic equity trades will be executed with a brokerage firm participating in a commission recapture program with the ARMB.

Staff recommends adding language to the Guidelines encouraging managers to direct execution only transactions and remove quantitative targets for commission recapture. Staff also recommends removing language encouraging managers to direct listed large capitalization domestic equity trades to a brokerage firm participating in a commission recapture program with ARMB. Staff believes the removal of this language will broaden the scope of the program beyond domestic large capitalization. Staff also believes that identifying a defined commission recapture target may incentivize managers to work to achieve that target when not in the best interest of ARMB.

RECOMMENDATION

The Alaska Retirement Management Board approve Resolution 2016-07 adding language that encourages equity managers to direct execution only transactions, removes quantitative targets for commission recapture, and removes language referencing listed large capitalization domestic equity.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Investment Guidelines for
Domestic, International and Alternative Equities

Resolution 2016-07

WHEREAS, the Alaska Retirement Management Board (Board) was established by law to serve as trustee to the assets of the State's retirement systems; and

WHEREAS, under AS 37.10.210-220, the Board is to establish and determine the investment objectives and policy for each of the funds entrusted to it; and

WHEREAS, AS 37.10.071 and AS 37.10.210-220 require the Board to apply the prudent investor rule and exercise the fiduciary duty in the sole financial best interest of the funds entrusted to it and treat beneficiaries thereof with impartiality; and

WHEREAS, the Board contracts an independent consultant to provide experience and expertise in asset allocation and other investment matters to come before the Board; and

WHEREAS, the Board has established an asset allocation for the funds that considers earnings and liabilities on a current as well as a future basis; and

WHEREAS, the Board has authorized investment in domestic and international equities; and

WHEREAS, the Board will establish and from time to time as necessary modify guidelines for domestic and international equities.

NOW THEREFORE BE IT RESOLVED THAT THE ALASKA RETIREMENT MANAGEMENT BOARD adopt the Investment Guidelines for Domestic, International and Alternative Equities, attached hereto and made a part hereof, regarding investment in domestic, international and alternative equities.

This resolution repeals and replaces Resolution 2015-06

DATED at Anchorage, Alaska this ___ day of April, 2016.

____
Chair

ATTEST:

____
Secretary

ALASKA RETIREMENT MANAGEMENT BOARD (ARMB)

INVESTMENT GUIDELINES FOR DOMESTIC, INTERNATIONAL, AND ALTERNATIVE EQUITIES

A. Purpose. The portfolio will have a primary emphasis on diversification to minimize risk.

B. Investment Structure. Permissible domestic, international, and alternative equity investments include:

1. equity and equity related securities of corporations incorporated in the United States that are listed on recognized stock exchanges where recognized stock exchanges are those acknowledged by a manager as a source of prudent investments for the fund; and

2. international equity and equity related securities listed on recognized stock exchanges where recognized stock exchanges are those acknowledged by a manager as a source of prudent investments for the fund; and

3. American depository receipts, American depository securities and global depository securities; and

4. convertible debentures; and

5. publicly traded partnerships listed on recognized stock exchanges, where recognized stock exchanges are those acknowledged by a manager as a source of prudent investments for the fund; and

6. investments owned as a result of a corporate action and not a direct purchase, including, but not limited to securities delisted and/or deregistered if held at a value deemed to be de minimis and compliant with the manager's specific investment mandate or strategy; and

7. equity related composite instruments including, but not limited to exchange traded funds (ETFs) and closed end funds if specified in the investment management agreement or determined to be fundamental to the manager's investment mandate or strategy; and

8. equity related derivative instruments including futures contracts, forward contracts, options, and swaps if specified in the investment management agreement or determined to be fundamental to the manager's investment mandate or strategy.

C. External Equity Management. The manager must represent and warrant:

1. that it is an "investment advisor" or "bank" as defined in the Investment Advisors Act of 1940 as amended; and

2. that it has completed, obtained and performed all registrations, filings, approvals, authorizations, consents or examinations required by any government or governmental authority for acts contemplated by this contract; and

3. that it is a "Fiduciary", as that term is defined in Section 3(21)(a)(ii) of ERISA with respect to the securities, and that it will discharge its duties with respect to the securities solely in the interest of the ARMB and the beneficiaries of the funds administered by the ARMB; and

4. that it has and will maintain all forms of insurance and other prerequisites required by the ARMB.

D. **Investment Management Service to be Performed.** From time to time, equity managers shall invest and reinvest the cash and securities allocated to it and deposited in their account, without distinction between principal and income, in a portfolio consisting of stocks or other securities when market conditions warrant alternatives to stock. These securities will be selected and retained by the manager solely on the basis of their independent judgment relating to economic conditions, financial conditions, market timing, or market analysis, and will not be subject to direction from the ARMB; provided, however, that in the event the aggregate total of any security held by the ARMB exceeds five percent (5%) of total shares outstanding, the ARMB may direct portfolio managers to sell securities until the aggregate is below five percent (5%). This guideline does not pertain to shares of mutual funds. Other securities shall be limited to:

1. obligations of the United States government; and

2. obligations of United States government agencies; and

3. certificates of deposit; and

4. corporate debt obligations; and

5. commercial paper; and

6. warrants; and

7. bankers acceptances; and

8. repurchase agreements.

E. **Managers will be Authorized.** Managers are authorized to invest or reinvest or dispose of any cash or securities held in their account or invest the proceeds of any disposition, provided that:

1. no more than ten percent of the voting stock of any corporation is acquired or held; and

2. certificates of deposit have been issued by domestic United States banks or trust companies which are members of the Federal Deposit Insurance Corporation, and are readily saleable in a recognized secondary market for such instruments; and

3. corporate debt obligations are rated A or better by Moody's, Standard & Poor's or Fitch rating services (Note: This rating restriction does not apply to convertible debentures); and

4. commercial paper bears the highest rating assigned by Moody's, Standard & Poor's or Fitch rating services; and

5. bankers' acceptances must have been drawn on and accepted by United States banks which have capital and surplus of at least $200 million each; and

6. repurchase agreements must be secured by the debt obligations set forth in 2 through 5 above; and

7. except as provided in Section B, Investment Structure, future contracts for sale of investments or for the sale of currencies may be entered into only for the purpose of hedging an existing ownership in these investments; and

8. except as provided in Section B, Investment Structure, futures and options will be authorized for the purposes of implementing a portfolio reallocation to gain immediate exposure to the appropriate country weighting:

    a. contracts are traded on recognized exchanges, or that OTC instruments are traded with AA rated or equivalent counterparts and no contracts exceed a period of twelve months; and

    b. futures and options are not used to leverage the portfolio; and

    c. all futures and options positions must be reported to the client each month. The report must show both the nominal position and the "economic impact" of all derivative positions; and

9. except as provided in Section B, Investment Structure, standardized equity index futures will be authorized for the purpose of cash equitization; and

10. purchases in commodities or the commodities of futures market of any kind are specifically prohibited; and

11. no more than ten percent (10%) of any international portfolio benchmarked against the MSCI EAFE Index or the MSCI EAFE Small Cap Index may be invested in emerging markets.

F. **Cash Held in Portfolio.** Managers are expected to maintain fully invested equity portfolios. The ARMB considers a portfolio to be fully invested as long as cash levels are below a maximum of 5 percent for small capitalization and international equity managers and 3 percent for all other equity managers, calculated using a 10-day moving average. In implementing this portion of the equity guidelines, the Chief Investment Officer will consider any cash in an individual equity account in excess of the maximum to be available for use as a funding source for other ARMB needs. Any manager that expects to exceed the maximum cash level in the short-term as the result of a specific strategy must notify ARMB in writing in advance. Such notice will temporarily exempt the manager from the maximum cash rebalancing threshold. Staff shall regularly report all equity manager net cash holdings.

G. **Performance Standards**. Managers are expected to have returns, over time, in excess of their appropriate contractual benchmark, net of fees.

H. **Performance Benchmarks**. ARMB's asset class level benchmarks for domestic and international equities are as follows:

Broad Domestic Equity – Russell 3000 Index

Global Equity ex US – MSCI ACWI ex US Index

Alternative Equity – S&P 500 Index (50%), CBOE Buy Write (30%), Bank of America Yield Alternatives Index (20%)

I. **Brokerage and Commissions.** In carrying out its functions, a manager will use its best efforts to obtain prompt execution of orders at the most favorable prices reasonably obtainable, and in doing so, will consider a number of factors, including, without limitation, the overall direct net economic result to the ARMB (including commissions, which may not be the lowest available but which ordinarily will not be higher than the generally prevailing competitive range), the financial strength and stability of the broker, the efficiency with which the transaction is effected, the ability to effect the transaction at all where a large block is involved, the availability of the broker to stand ready to execute possible difficult transactions in the future and other matters involved in the receipt of "brokerage and research services" as defined in and in compliance with Section 28(e) of the Securities Exchange Act of 1934, as amended, and regulations thereunder.

~~Provided that, in the judgment of the manager, purchase or sale execution and transactions are competitive, approximately 30% of all listed large capitalization domestic equity trades will be executed with a brokerage firm participating in a commission recapture program with the ARMB.~~
If the manager determines execution only transactions do not result in the greatest net benefit to ARMB considering the factors described in this section I, the manager is encouraged to execute transactions with a brokerage firm participating in a commission recapture program with the ARMB.

The Chief Investment Officer will evaluate and report the commission recapture program to the ARMB that will include:

1. total commission dollars recaptured; and

2. actual percentage of commissions recaptured; and

3. a full analysis of the commission recapture program with recommendations for expanding the program.

J. **Voting and Other Action.** The managers shall vote any or all of the securities held by or for the account of the ARMB, unless written instructions to the contrary have been provided by ARMB. In voting securities of the ARMB, the managers shall act prudently in the interest and for the benefit of the ARMB and the beneficiaries of the funds administered by the ARMB. The manager is to furnish, on an annual basis, copies of the contractor's policy and voting records in regards to voting proxies.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT:	Adjustment of staff authorization to engage in futures and swaps.	ACTION:	X
DATE:	April 21-22, 2016	INFORMATION:	

BACKGROUND:

The Alaska State Pension Investment Board authorized fixed income investment officers to engage in total rate of return swaps in June 2004. The Alaska Retirement Management Board (ARMB) authorized the use of futures on its behalf by State Street Global Advisors when it approved the cash equitization program in February 2006. In September 2010, the ARMB authorized the use of equity options by external managers when it approved the Buy-Write mandate.

At its February 2016 meeting, the ARMB granted authority to staff to do the following:

- Transition management of the cash equitization program from State Street Global Advisors to internal staff.
- Transact in futures contracts
- Transact in swaps contracts.
- Engage in portable alpha strategies.

At the time, constraints were specified on staff's authority to engage in futures and swaps transactions. Allowable transactions must reference either the Russell 1000 or the Russell 2000, and can be for no more than $500 million in each transaction.

STATUS:
Staff requests access to futures and swaps that reference the S&P 500 Index, as it is a more liquid benchmark than the Russell 1000. Additionally, staff requests the notional limit be raised from $500 million to $750 million.

RECOMMENDATION:

The Alaska Retirement Management Board authorize staff to engage in futures and swaps that reference the S&P 500, Russell 1000 and Russell 2000 Indices. The notional value of swaps and futures is constrained to a total of $750 million long exposure and a total of $750 million of short exposure.

ALASKA RETIREMENT MANAGEMENT BOARD
M E M O R A N D U M

To: ARMB Trustees
From: Judy Hall
Date: April 8, 2016
Subject: Financial Disclosures

As required by AS 37.10.230 and Alaska Retirement Management Board policy relating to investment conduct and reporting, trustees and staff must disclose certain financial interests. We are hereby submitting to you a list of disclosures for individual transactions made by trustees and staff.

Name	Position Title	Disclosure Type	Disclosure Date
Scott Jones	Comptroller	Equities	3/22/16
Bob Mitchell	Investment Officer	Equities	1/28/16
Gary Bader	Chief Investment Officer	Equities	4/1/16

Alaska Retirement Management Board
2016 Meeting Calendar

February 17 – Wednesday	Committee Meetings: Actuarial Audit Defined Contribution Plan Legislative
February 18-19 Thursday-Friday Juneau	*Review Capital Market Assumptions *Manager Presentations
April 20 – Wednesday	Committee Meetings: Actuarial Committee
April 21-22 Thursday-Friday Anchorage	*Adopt Asset Allocation *Performance Measurement – 4^{th} Quarter *Buck Consulting Actuary Report *GRS Actuary Certification *Review Private Equity Annual Plan *Manager Presentations
June 23 – Thursday	Committee Meetings: Actuarial Audit
June 24 Friday Anchorage	*Final Actuary Report/Adopt Valuation *Performance Measurement – 1^{st} Quarter *Manager Presentations
September 28 – Wednesday	Committee Meetings: Actuarial Audit Budget Defined Contribution Salary Review
September 29-30 Thursday-Friday Fairbanks	*Audit Results/Assets – KPMG *Approve Budget *Performance Measurement – 2^{nd} Quarter *Real Estate Annual Plan *Real Estate Evaluation – Townsend Group *Manager Presentations
October ____	Education Conference
October/November	Audit Committee
December 7 – Wednesday	Committee Meetings: Audit Legislative
December 8-9 Thursday-Friday Anchorage	Audit Report - KPMG Performance Measurement – 3^{rd} Quarter Manager Review (Questionnaire) Private Equity Review *Manager Presentations